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JOURNAL

OF THE

STATISTICAL SOCIETY

OF

LONDON.

VOL. XVIII.

LONDON:

JOHN WILLIAM PARKER AND SON, 445, WEST STRAND.

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NOTICE.

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QUARTERLY JOURNAL

OF THE

STATISTICAL SOCIETY.

MARCH, 1855.

On the Current Price, and the Cost Price, of Corn, in England, during the last Ten Years, as illustrating the value of Agricultural Statistics.
By J. T. DANSON, ESQ.

[Read before the Statistical Section of the British Association for the Advancement of Science, at Liverpool, 25th September, 1854.]

The purpose of this Paper

Is to bring to view some of the effects upon the corn-growers of England, considered as capitalists, of the annual fluctuations in the average price of corn.

These fluctuations have in all countries, and at all times, been deemed inconvenient to the *consumers* of corn; in other words to the entire population. When great, they draw after them the greatest calamities that afflict the human race. And all the efforts that have yet been made to prevent them have evidently left much to be done. When governments have tried restrictions on the trade in corn, they have invariably made matters worse. And free trade, though it removes all restrictions on the distribution of the world's stock for each season, still leaves us—as the experience of the last few years has proved—subject to causes of fluctuation too powerful to be agreeable, or to be long disregarded.

What these remaining causes are I shall not here attempt to point out; though the directions in which they may most hopefully be sought for, will be readily inferred from an examination of the tables appended to this paper. Nor do I propose, here, to regard the effect of these fluctuations upon the consumer; but, first to state their amount, and some of the more prominent of the circumstances attending them, during the last ten years; and then to draw your attention to a somewhat narrower field of view—I mean their bearing upon *the producer*; and thence to the bearing of the facts upon one of the leading questions of the day.

As it is obviously the chief purpose of any such system of agricultural statistics as that now under discussion, to enable us to reduce these fluctuations within narrower limits, I trust the results

of the present paper may be found useful in more clearly showing the practical value of such statistics—possibly even in aiding the formation of the system, and (though last, not least) in marking the value, to *the farmer* himself, of information which, as it will be demanded on behalf of the consumers, he may not reasonably suppose is calculated especially to promote their interest.

The Materials used.

The materials available, and of any value, are but scanty. First, there is the weekly average price of each of the six descriptions of grain and pulse—wheat, barley, oats, rye, beans, and pease—published in the London Gazette. This average is based, as is generally known, upon returns, obtained every week, from each of 290 towns in England and Wales, in which corn markets are held. This under the authority of the Act 5 Vict. c. 14, s. 9, (passed 29th April 1842) and better known as the Corn Act of that year. These returns give, for each town, the quantity of each description of corn sold, and the average price, as deduced by the local officer from statements received by him from the dealers, under penalties for withholding or misstating the facts. From the local quantities and prices, a general total and average are made up, and published every week. And at the end of the year a like total and average is made up for the year.

The weekly averages are, I believe, made up in such a manner as to be trustworthy. But the annual average is, for any such purpose as the present, somewhat defective. In the first place, it is the practice of the office in London (or was so until recently) to deduce the annual average price from the weekly averages, simply by adding them together, and dividing by the number of weeks in the year: a method obviously erroneous, inasmuch as, the quantity sold at each of these weekly averages not being the same, the influence of each upon the common average should not be the same. The practical effect of this error is not usually of much importance, except in years such as 1847—when the home stock of corn being run very low before the new stock comes in, the quantities sold during the last few months before the harvest are unusually small. Speaking generally, its effect is to give an undue influence to the *later* averages of the harvest year—the quantities brought to market decreasing, upon an average of years, with some regularity, from the date of one harvest to that of the next.

Another objection to which these annual averages are open is this:—there is no definite relation between the year to which they apply (that being the year of the Almanac, running from the beginning of January to the end of December) and the year within which each crop of corn is produced and consumed. In short, the almanac year is not the agricultural or harvest year. Nor, indeed, does the harvest year admit of precise dates. Its beginning and ending must, in fact, vary with the seasons; and were it my present purpose to mark with the utmost precision the difference between the annual average prices of the Gazette, and those applicable to the produce of each of the last ten harvests, it would be necessary to vary the actual duration of several of the harvest years by two or three weeks. But if we take the *average* date of the gathering of the corn harvest in

England as a starting point, it will be found that the period during which the produce of each successive crop of corn maintains possession of the market, includes about sixteen or seventeen weeks of one almanac year, and about thirty-five or thirty-six weeks of the next. For all practical purposes, perhaps we may safely assume that the first week of September is, one year with another, the first in which the new corn annually comes into use.

As to the *foreign supply*, we have the returns made to the Board of Trade by the Customs authorities, and published monthly, of the quantities of corn (with other articles) imported into the United Kingdom, and the quantity entered as retained for home consumption. For our present purpose—the paper being confined to the corn trade of England and Wales, and these returns of imports having reference to the United Kingdom—it may be objected that the materials cannot properly be used without distinguishing the proportions of the imported supply carried into the consumption of Ireland and Scotland. But there are no means of making any such distinction in a trustworthy manner; and, practically, it is not necessary; inasmuch as the imports of corn from abroad into the United Kingdom (alike wheat, barley, and oats, but more particularly wheat) though some portions of them enter the ports of Scotland and Ireland, do, in effect, as both those countries, in the regular course of things, send corn to England, operate to increase the *English supply*.

Average Prices, 1843–1853.

In Table I. (see Appendix) will be found stated the annual average prices, as published in the Gazette, for the eleven (almanac) years 1843–53, of *wheat, barley, and oats*. I repeat them here in decimals of a pound sterling:—

Annual Average Prices, per Gazette.

Years.	Wheat.	Barley.	Oats.
	£	£	£
1843.....	2·504	1·475	·916
1844.....	2·562	1·683	1·029
1845.....	2·541	1·583	1·125
1846.....	2·733	1·633	1·183
1847.....	3·487	2·218	1·433
1848.....	2·525	1·575	1·025
1849.....	2·212	1·387	·875
1850.....	2·012	1·171	·821
1851.....	1·925	1·237	·929
1852.....	2·037	1·425	·954
1853.....	2·662	1·658	1·05

In Table II. (see Appendix) will be found, similarly stated, the annual average prices of *wheat, barley, and oats*, as computed for the harvest years, from the first week of September forward; but by use of the same method as is used for obtaining the official annual prices. These, also, I repeat here in a decimal form:

Annual Average Prices for Harvest Years.

Harvest Years.	Wheat.	Barley.	Oats.
	£	£	£
1843—44.....	2·65	1·625	·983
1844—45.....	2·354	1·621	1·075
1845—46.....	2·729	1·508	1·154
1846—47.....	3·546	2·329	1·471
1847—48.....	2·558	1·571	1·066
1848—49.....	2·383	1·475	·929
1849—50.....	2·017	1·229	·816
1850—51.....	1·991	1·204	·908
1851—52.....	1·991	1·379	·883
1852—53.....	2·229	1·496	·95
1853—54.....	3·7	1·9	1·346

If these two sets of prices be compared, by taking from the first the prices of the ten almanac years, 1844-53, and from the second the ten harvest years, 1843-44 to 1852-53, it will be observed that the former (the series of *almanac* years,) will give the highest decimal average. This is accounted for by the range of prices in the four last months of 1843 having been lower than in the corresponding part of 1853, the former being taken in, and the latter omitted, in forming the observed series of *harvest* years. The ten almanac years give a common average for

	Wheat.		Barley.		Oats.
Of	£2·469	.....	£1·557	.....	£1·042
Or	49s. 5d.	.....	31s. 2d.	.....	20s. 10d.

While the ten harvest years give an average for

	Wheat.		Barley.		Oats.
Of	£2·444	.....	£1·543	.....	£1·023
Or	48s. 10d.	.....	30s. 10d.	.....	20s. 5d.

Inspected Supply of British Wheat.

The tables above, as I have said, are both vitiated, though to no great extent, by a defective mode of computation: one which does not regard the fluctuations occurring in the quantities of corn brought to market at different periods throughout the year. Before proceeding further, therefore, it is necessary to have regard to these quantities.

And as the exhibition of these quantities involves the use of a large additional number of figures, I shall here narrow the field of view, and confine it to *wheat* only, this being, in every point of view, the most important description of corn: all others usually following it (nearly) in their fluctuations of price; and the inferences fairly deducible from the figures, as thus limited, being amply sufficient for the present purpose, as well as quite sufficient to tax your attention with at one time.

In Table III., then, (see Appendix) will be found stated the *quantities* of British wheat returned as sold in the 290 inspected markets of England and Wales, in each month of the eleven harvest years ending with the last week of August in the present year (1854).

It will be observed that the largest quantities are sold in the

months of October, November, December, and January; the averages taken over the eleven years, being, for each month, as follow:—

	Qrs.		Qrs.
September.....	432,839	March	419,442
October.....	530,739	April	343,751
November.....	459,049	May	406,941
December	474,360	June	366,407
January.....	455,847	July	339,771
February	385,976	August	390,052

The average monthly quantity sold in the four months of October, November, December, and January, is about 480,000 quarters. In the other eight months of the year the average very little exceeds 385,000 quarters. And this is just what we might expect. The corn is threshed out and brought to market under the motives, generally more or less mixed, of (1) convenience for threshing, (2) hope for extra profit, and (3) want of money. Convenience for threshing is most commonly found by the farmer in those months when work out of doors is most difficult and least needed. Hope for extra profit prompts extra supplies chiefly in the first months of a harvest year in which the experience or the apprehension of scarcity has caused high prices. And want of money often compels the poor farmer to force his corn into the market within a month or two after it is gathered from the fields. But, whatever the causes of these fluctuations, it is obvious that, without due regard to them, we cannot deduce from the weekly average prices an annual price which shall truly represent that paid by the consumer, and received by the producer, from year to year.

Average Prices in Harvest Years.

In Table IV. (see Appendix) will be found the monthly prices of wheat, as published by the Board of Trade, arranged in harvest years, from September, 1843, to September, 1854. And here it will at once be seen that, as the first months of the harvest year give the largest supplies, so they also give the lowest prices per quarter; the averages for each month, taken over eleven years, being as under:—

	£		£
September.....	2.404	March	2.583
October.....	2.462	April	2.575
November.....	2.504	May	2.641
December	2.475	June	2.658
January.....	2.558	July	2.641
February	2.575	August	2.575

Or stated quarterly:—

	£	s.	d.
1st quarter.....	2.456	or	49 1
2nd „	2.536	„	50 9
3rd „	2.599	„	52 0
4th „	2.658	„	53 2

Supply in Harvest Years.

In Table V. (see Appendix) are collected, under one view, the quantities of wheat returned as sold in each quarter of the eleven harvest years, from September 1843, to September 1854, with the quantity in each quarter above or below the average of the same

quarter during the whole period; and also the average *prices* (obtained by the official method*) for each quarter, with the like variation of such price above or below the average of the whole period.

Here the excess of price is seen to coincide, generally, with the deficiency of supply of British wheat, so far as this supply may be inferred from the sales in the inspected markets; but it is apparent that the agreement of the two elements is far from complete. This may remind us that the foreign supply is still not in view; and that this operates upon the average price equally with the home supply.

Total Supply of British Wheat.

In Table VI. I have endeavoured to complete, hypothetically, our view of the home supply, by assuming that the quantity sold in the inspected markets forms $\frac{5}{14}$ ths of the total quantity consumed, or rather the total quantity kept or sold by the producer for consumption, and therefore excluding so much of the actual current supply as may be reserved for seed. With the aid of this assumption I am enabled to approximate what may be deemed the true average price, as received by the grower, in each harvest year; and thence to show how much money may be reasonably supposed to have passed from the consumers to the producers in each such year, in exchange for the crop of that year. An enumeration of these sums, by harvest years, will afford the first distinct view of the nature of the fluctuations to which, by this paper, I desire to draw your attention:—

Total Sums apparently received by the British Producers of Wheat, in each of the last Eleven Harvest Years.

	£		£
1843—44.....	38,953,000	1849—50.....	27,817,000
1844—45.....	43,910,000	1850—51.....	24,063,000
1845—46.....	41,672,000	1851—52.....	26,936,000
1846—47.....	50,989,000	1852—53.....	30,195,000
1847—48.....	37,647,000	1853—54.....	34,864,000
1848—49.....	36,009,000		

The annual average amount is about 35,240,000*l.* The highest average price occurred in the last year (that just expired); but the deficiency of the supply seems to have reduced the receipts of the grower, notwithstanding this high price, somewhat below the average amount. Hence, and in order partly to simplify the subsequent calculations, and partly to avoid reliance upon statistical data of so very recent acquirement, and which cannot be completed, in some respects, without the aid of hypothesis, I exclude that year (1853-4) from view. Leaving it out, and confining our attention to the ten harvest years from September, 1843, to September, 1853, it will be observed:—

1. That the farmer's receipts were *above* the average in every year of the *first five*, and below it in every year of the *last five*.

2. That in the first five years he appears to have received for his wheat a total of about 213,000,000*l.* sterling, or about 37,000,000*l.* more than he would have received, had the average price of those five years been the same as the average price of the whole ten; and

* When the use of this method is limited to the quarters, the effect of its erroneous form is scarcely appreciable in the result.

3. That in the second five years he received only about 139,000,000*l.* sterling, or about 37,000,000*l.* less than he would have received had the decennial average price prevailed throughout the ten years.

In one year of the ten (1846-7,) the apparent supply of British wheat barely exceeded 15,000,000 of quarters; and it brought nearly 51,000,000*l.* sterling. In another year (1850-51) the same supply appears to have barely exceeded 12,000,000 quarters, and to have brought only 24,000,000*l.* sterling.

Again, in the *first five* of these harvest years, the average price of wheat appears to have been, allowing for the erroneous official mode of calculation, about 53*s.* 11*d.* per quarter. In the last five years it was only 42*s.* 6*d.*, a difference of more than 10*s.* per quarter. And on reference to Table II. it appears that the prices of barley and oats fluctuated much in the same way: the average prices of barley, for the first five years, having been 34*s.* 7*d.*, and for the last five years only 27*s.* 1*d.*; and of oats, for the first five years 23*s.*, and for the second only 17*s.* 11*d.*

And here we are reminded that the fluctuations taking place in the price of wheat, the material of bread, indicate very nearly similar movements in the prices of all the more commonly-used descriptions of food raised by the English farmer; and consequently that he cannot, as a rule, be supposed to have derived any material advantage from countervailing fluctuations in the prices of other descriptions of agricultural produce.

The Foreign Supply.

In Table VII. I have brought together the estimated quantity of home-grown wheat supplied in each harvest year, and the *foreign* supply of wheat and flour entered for consumption in this country in the same year. With the whole of the supply for each year thus apparently before us, we find, however, that the fluctuations of supply and of price were not, in several instances, nearly coincident. The price did not uniformly rise in proportion, or nearly in proportion, to the falling off of the supply, or *vice versâ*. Here, however, we may refer to several disturbing influences (apart from variations of the supply) well known to have been in operation during this period. The *demand* was much affected by the failure of the potato crop, especially in 1846-7. It was also affected by fluctuations in the current purchasing power of a large proportion of the consumers. Nor was the irregularity introduced into *the growth of our population*, by the progress of emigration, and by one or two lesser causes, without influence in the same direction. But it were beside the present purpose to pursue the line of investigation here suggested.

The Effect of these Fluctuations on Agriculture, as an Investment for Capital.

It may be observed, and it must be admitted, that every advance in the art of farming tends to diminish in some degree the influence of the seasons; and that the best farmers may be reasonably supposed to have been least exposed to the effect of these fluctuations, in consequence of their having held, in bad seasons, more than an

equal proportion of the saleable produce of the season. But these considerations have no influence on the general conclusion. They only conduct us to the further inference that, while the fluctuations exhibited in these averages were nearly those felt by *the farmer of average skill, capital, and forethought*, and the best farmers suffered somewhat less, there must have been a large number who suffered more—a large number by whom the comparatively high prices of the first five of these harvest years (giving an average, as we have seen, of only 53s. 11d. per quarter) were received as by no means excessive, or indicative of the probability of a counteracting fall; while the low prices of the last five years can have operated on this (the poorest and most numerous) class of our corn-producers, as such a series of low prices (accompanied by crops rather under than over an average) only can act: *to the dispersion as income of a portion of their already deficient capital.*

It is at the point of view thus suggested that I would most especially request the attention of the section, believing, as I do, that we here obtain a distinct and accurate view of some of the most powerful of the influences now acting prejudicially on the business of agriculture in this country—in other words, on the business of raising, year by year, the food which forms the first necessary of life to us all. A few there are to whom these fluctuations mean only the occasional, and but temporary, surrender of little-needed luxuries; or scarcely even that. But to the great body of the nation they are, it is almost needless to say, of the highest temporal importance, inasmuch as the disturbance they produce in all the channels of trade, added to the actual suffering in time of scarcity from lack of food, and of that which is given up to secure food, is found at the root of a very large proportion of the misery and crime, the gradual eradication of which is at once the best proof and the highest reward of our success in science. But to return to the immediate purpose.

Every one acquainted with commercial transactions knows that, of all the arts of life, there is not one of which it may not be confidently asserted that its methods will be improved and its results cheapened in proportion as *capital* (under the guidance of due skill) shall be applied to its culture. In proportion as the return upon a given investment of capital, in any business whatever, may be counted upon with certainty, with respect to time and amount, so, invariably, does that business attract to itself capital, and with capital the continuous industry and ability required to perfect its methods, and to render its returns still more secure and equable. In other words, *the element of uncertainty, wherever found, deters the prudent man*; and while alluring the speculative, by imparting to the occupation something of the hazardous allurements of gambling, as surely tends to lower the available credit of those whose means are thus invested. And the first lesson learnt from the figures now before us is, that the returns upon capital invested in corn-growing in England are now extremely uncertain.

Cost Price of British Wheat.

What may have been the cost price of wheat to the producer during this period of ten years can, of course, only be guessed at.

If we accept the fact of the markets having been supplied during so long a period, as evidence that the producers were, on an average of the whole period, in receipt of profits sufficient to induce them to retain their capital in that form of investment, we may safely take the average price of the ten years as covering the cost. This average is about 48s. 3d. per quarter, a sum, I believe, quite as low as the best informed advocates of free trade in corn have hoped to see established as the average of a long period of years. Nor, low as it is, as compared with the prices talked of some years ago as necessary to maintain the growth of corn in this country, can I doubt that the English farmer would be a gainer at this price, *could it be approximated more nearly year by year.*

The Price the Farmer wants.

One of the fallacies which a few years ago were too well ventilated to survive was the assertion that the farmer's interest required a high price of corn. What he really wants for all his produce is precisely what his customers' want—a *price that does not fluctuate too much.* A low price, other things being the same, is good for the whole nation, farmers and all. It means only that the necessaries of life are easily obtained. What the farmer lives by is not the *price* he gets, but the *profit* he gets. As for his *rent*, it is part of his business to know the value of the land he tills; and, if he pays his landlord more than it is worth, he commits precisely the same error as a manufacturer who pays more than he should for his factory, his machinery, or his raw material. In buying all these things as cheaply as he can, he and the manufacturer alike pursue their own profit, to the good of the public, and succeed in the pursuit exactly as they excel in the occupation they have chosen. Both, in fact, in directly seeking profit, must, though indirectly, do all they can to lower prices. They can no more separate the two operations than they can move in two directions at the same time. But what both also desire, and most legitimately desire is, that in commencing each transaction involving a renewed investment of capital, they may see, with as much certainty as possible, what the returns will be. Absolute certainty is, of course, impossible, and is never expected; but the nearest possible approximation to it is perfectly well recognized as evidence of the highest attainable skill in commerce. May we not accept the absence of any such approximation, in the production of corn, as evidence of a culpable lack of commercial skill in that branch of the national business?

What is to be done?

Patent the evil; but latent the remedy. How shall we attain greater fixity of price? It were to tax your attention most unreasonably to enter at any length upon what is suggested by this question; and I shall certainly not presume to answer it. The purpose of the present paper has been defined; and when I shall have induced you to consider how *the farmer* is affected by these fluctuations of price, and how nearly identical is his interest with that of the consumer in promoting every means of reducing them within narrower limits, that purpose will have been effected.

I may, however, be permitted to suggest that the remedy here required is probably not very different from that which we may see generally succeeding in like cases: I mean *the application of greater intelligence to the operations in question*; in other words, a more general application to the art of farming of the methods and facilities which have been found to promote success in weaving calico, in building ships, and in every other form of production.

Agriculture now undoubtedly owns the distinction of being at once the most ancient, the most necessary, and the most rudely practised of all the arts of life. To the business of raising and storing the food of the nation is devoted (in proportion to its importance) less capital, less skill, and less forethought, than to any other branch of the national business. And the manner in which the food of the nation is annually made the sport of the elements seems to be nothing more than one of the natural results of this arrangement. Anomalous, this, and yet quite consistent with the actual condition, in a mercantile point of view, of the producers of our annual supply of home-grown corn. I do not speak of exceptions, but of a very large majority.

It is obvious to remark that, as a body, farmers enjoy few of the intellectual advantages open to those whose business is carried on in towns; and the result is seen in a somewhat low standard of general intelligence. They have, comparatively, few ideas, and many prejudices. Locally dispersed, they cannot mingle much with each other. Few of them communicate with any common centre of intelligence likely to expand their views of their own occupation, or to suggest any common or combined action. There are even few among them who make any continuous or systematic record of their pecuniary transactions. And, finally, there is no class of men to whom the resources of credit, so amply employed in most other branches of industry, are so little available on safe grounds. In any other business a man of proved ability and integrity finds no appreciable difficulty in any prudent extension of his operations by the aid of borrowed capital. But this is rarely done in farming; and where done seldom affords much encouragement to the capitalist. Several causes are here found acting together. The local and social peculiarities of the class (already referred to) exercise some influence. Something is also due to the slow nature of the business: the capital invested being generally turned only once a year; and something also to the inaptitude of farmers (as a class) to take up new business facilities of any kind. But were all these removed, or overcome, there remains behind the greatest of all—the uncertainty of the returns, not so much of the amount of the crop (for good farming already goes far, and every year goes farther, to remove this), but of the price to be obtained for it.

I have said that farmers, notwithstanding the uncertainty of the returns on their capital, and the consequent necessity of their occasionally drawing upon capital for their current means of subsistence, have comparatively few facilities for availing themselves of the use of credit. It follows that, as a class, they make less use of the facilities of banking than any other class investing a similar amount of capital. Speaking generally, *the farmer makes his stack-yard his*

bank, whenever he is in a condition to need one, and is much ruled in his choice of a time for bringing his corn to market by the pressure of the pecuniary demands upon him. Hence, whenever high prices have prevailed long enough to set him at his ease, he is apt to hold his corn on hand quite as much because he can afford to do it, and because to sell when money is not immediately wanted has, by the force of habit, come to be deemed by him a somewhat needless, if not thriftless, proceeding, as from any hope of ultimate gain by so doing. Of course, judged by the standard applied to all other commercial affairs, a sale of produce, timed solely to meet, and prompted by, the demands of creditors, can only be regarded as a very undesirable, and by no means unexceptionable mode of carrying on business. And on the other hand, it is fairly open to discussion whether, when a farmer holds his corn with a view to obtaining a higher price for it, he does not quit, in some sort, his legitimate character of a producer, and assume that of a *dealer*. This is especially the case with a farmer: inasmuch as the regular routine of his business points out a particular season as that at which he can most fitly thresh and dress his saleable corn, and bring it to market. This period is mid-winter, when the straw is needed for his cattle, and when the occupation of threshing and dressing corn, carried on as it is under shelter, and for the most part independently of the weather, enables him to dispose, without loss, of the labour he must needs pay for continuously, and cannot then use in the open fields. And, once ready for market, the grain must be sold, or the farmer must incur the outlay and the responsibilities of a dealer. To keep corn on hand, in large quantities, after it is threshed, requires store room and processes which have no proper place in the economy of the farm; and it is, in fact, very seldom done.

Now it obviously follows that, were the rule suggested by these observations strictly and generally acted upon, no corn would be brought to market by the growers much before Christmas, or after the end of February; and this would have one or two material advantages. It would render expedient, if not compel, the holding over by the dealers (on behalf of the consumers) of a much larger stock of corn from the produce of one harvest till after the gathering of the next, and thus tend to equalise prices between one harvest and another; and it would obviate the need for the practice, more or less common every year (and the reverse of economical), of bringing the soft new wheat at once into consumption by mixing it with old grain. It would also render much more facile the attempt, sure to be made before long, to take stock of the national corn-fund early enough every year to make all due and practicable provision for defects in the course of the current season. And the farmer who, in view of what has now been stated, can doubt that it would be for his benefit to have such an account placed before him once or twice a-year, at the cost only of contributing his own share of the materials, must surely be impervious to reasoning on this or any similar topic.

It is true that a good system of agricultural statistics, and all that could be immediately hoped for from it, would seem to offer but weak and scanty means toward so important an end as the one here in view. But experience does not warrant our reliance in such cases

upon a *coup de main*. The change required must be gradual. It must come of a conviction, among those most nearly concerned, that the change will promote their interest. Such convictions are of slow growth in any class, and can hardly be of rapid growth among farmers. They want good reasons, plainly stated, and plenty of time to consider them. It is for the benefit of us all that these conditions should be complied with. And when a movement of this kind shall once begin, in the right direction, it will be more rash to set a limit to what can be done than to predict a measure of success fully adequate to the efforts made for its attainment.

Science has already, by the single method of averages, conferred upon mercantile transactions all the benefits of insurance, distributing, and so apparently almost destroying, the pernicious effects of commercial uncertainty involved in life, fire, and sea-risks. But insurance is only one of the methods of forestalling commercial risk suggested by the action of intelligence upon trade. The commerce of towns has already largely benefitted by such methods. Agriculture is, of all the arts, the least so aided; hence (for the most part) the low condition of this art, the enormous fluctuations of its annual returns, and the very small provision of means for counteracting the natural causes of these fluctuations.

Here, then, we have offering itself for execution a task, than which none can be more worthy of the science of our own time.

And let it be remembered that it is not merely a *farmer's question*. It lies at the very root of the daily life of the nation. Pore as we may over the history of the country during the last fifty years, we still see, dimly but certainly apparent, behind all that is least welcome in the condition of the people, this fluctuation of the cost of the first necessary of life. Nor is the object in view that of raising, or artificially fixing, the price of corn. Far from it. It is that of eliminating, as far as possible, those elements of uncertainty which make it so difficult at present, not only for the farmer to guess, when sowing his seed, what will be the value of a bushel of the crop, but for "pater familias," everywhere, to guess the length of next year's baker's bill, or to foresee the price of consols, or the interest of money, or how his income may be affected by stagnant commerce, or his health by the pestilence that dogs the heels of famine. And it is only with a firm belief that science, rightly applied, may effect much improvement in this direction, that I have ventured so long to occupy the time of the section.

Carnsdale House, Barnston, Cheshire.

APPENDIX.

TABLE I.

Average Annual Prices, as published in the London Gazette, of Wheat, Barley, and Oats.

Year.	Wheat.		Barley.		Oats.	
	s.	d.	s.	d.	s.	d.
1843.....	50	1	29	6	18	4
1844.....	51	3	33	8	20	7
1845.....	50	10	31	8	22	6
1846.....	54	8	32	8	23	8
1847.....	69	9	44	2	28	8
1848.....	50	6	31	6	20	6
1849.....	44	3	27	9	17	6
1850.....	40	3	23	5	16	5
1851.....	38	6	24	9	18	7
1852.....	40	9	28	6	19	1
1853.....	53	3	33	2	21	0

TABLE II.

Average Annual Prices for the Harvest Years, (commencing the first week in September,) of Wheat, Barley, and Oats.

Year.	Wheat.		Barley.		Oats.	
	s.	d.	s.	d.	s.	d.
1843—44.....	53	0	32	6	19	8
1844—45.....	47	1	32	5	21	6
1845—46.....	54	7	30	2	23	1
1846—47.....	70	11	46	7	29	5
1847—48.....	51	2	31	5	21	4
1848—49.....	47	8	29	6	18	7
1849—50.....	40	4	24	7	16	4
1850—51.....	39	10	24	1	18	2
1851—52.....	39	10	27	7	17	8
1852—53.....	44	7	29	11	19	0
1853—54.....	74	0	38	0	26	11

TABLE III.

Monthly Quantities of Wheat Returned as Sold in the 290 Inspected Markets of England and Wales—1843-44 to 1853-54.

Harvest Year.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.
	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.
1843-44	461,509	531,389	411,236	549,480	412,434	448,457	510,013	305,756	400,919	481,213	338,206	386,732
1844-45	450,327	540,784	626,296	554,176	518,031	539,476	726,759	442,393	600,869	439,798	439,632	785,641
1845-46	414,693	618,168	665,163	475,617	503,317	455,939	422,775	444,373	531,126	356,951	383,642	438,233
1846-47	654,509	815,455	419,573	553,070	671,199	394,946	454,255	316,996	487,166	169,755	232,062	192,668
1847-48	288,362	533,539	422,637	474,062	517,585	396,264	372,211	410,633	354,982	417,153	547,280	529,976
1848-49	599,073	416,353	391,815	446,509	359,246	322,163	374,296	312,814	310,221	387,606	268,015	289,866
1849-50	418,820	497,869	409,369	503,698	414,332	382,673	419,935	317,497	354,972	459,974	313,442	407,610
1850-51	372,942	399,442	466,904	377,524	320,200	349,256	384,582	312,797	378,181	347,170	238,485	367,838
1851-52	364,951	447,582	513,836	462,163	504,217	375,173	362,528	288,203	452,578	402,656	330,593	341,367
1852-53	331,292	566,926	405,281	473,699	532,282	345,329	358,886	390,214	360,612	348,435	412,399	322,168
1853-54	384,558	470,625	287,437	347,966	260,477	256,061	227,626	239,601	244,733	219,775	233,732	228,478
Average ...	432,839	530,739	459,049	474,360	455,847	385,976	419,442	343,751	406,941	366,407	339,771	390,052

TABLE IV.
Monthly Average Prices of Wheat in England and Wales, arranged in Harvest Years.

Harvest Yr.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1843—44	51 4	50 5	51 7	50 6	51 1	53 5	56 3	55 4	55 6	55 7	54 4	50 0
1844—45	46 4	46 1	45 11	45 3	45 8	45 4	45 3	46 1	45 11	47 10	49 7	55 9
1845—46	53 10	57 10	58 10	57 10	55 6	54 7	54 10	55 9	55 9	52 1	51 5	46 3
1846—47	50 10	58 7	60 7	60 3	69 11	72 10	75 4	75 4	88 9	92 10	79 2	66 3
1847—48	52 9	54 9	53 3	52 3	53 3	50 9	50 5	50 3	49 0	47 7	48 7	50 11
1848—49	54 2	51 9	51 9	48 2	45 1	46 1	44 11	44 9	45 4	44 7	48 3	46 6
1849—50	43 3	41 7	40 8	39 3	40 6	38 4	38 1	37 10	38 9	40 2	42 0	43 8
1850—51	42 9	41 0	40 1	39 3	38 1	37 8	37 3	39 0	38 8	40 7	42 11	40 11
1851—52	37 10	35 11	36 6	37 5	38 4	42 2	42 6	41 0	40 9	40 9	40 10	40 11
1852—53	41 9	38 6	39 11	43 3	46 0	45 2	45 4	44 6	44 2	44 9	49 9	51 7
1853—54	54 6	65 11	72 5	71 7	80 2	80 10	78 10	77 2	79 2	78 8	74 0	63 4
Average	48 1	49 3	50 1	49 6	51 2	51 6	51 8	51 6	52 10	53 2	52 10	50 6

TABLE V.

Quarterly Fluctuations of the Quantity of Home Grown Wheat, returned as sold in the 290 Inspected Markets of England and Wales; with the concurrent Fluctuations of the Average Price; each in relation to the Average (for each quarter) of the Ten Harvest Years 1843-44 to 1852-53.

Harvest Year.	Quar- ters.	Quantity sold in Inspected Markets.	Average Price.	Quantity in excess of the Average of the corresponding Quarter in the ten Years 1843-44— 1852-53.	Quantity in deficiency of the same Average.	Price in excess of same Average.	Price in deficiency of same Average.
		Qrs.	s. d.	Qrs.	Qrs.	s. d.	s. d.
1843—44	I.	1,434,134	51 1	....	16,524	3 5	....
	II.	1,411,371	51 8	59,020	....	3 7	....
	III.	1,216,682	55 8	732	....	6 4	....
	IV.	1,206,151	53 4	68,495	....	3 4	....
1844—45	I.	1,617,607	46 1	166,949	....	....	1 7
	II.	1,611,683	45 5	259,332	....	....	2 8
	III.	1,770,021	45 9	554,071	....	....	3 7
	IV.	1,665,071	51 0	527,415	....	0 8	....
1845—46	I.	1,698,024	56 10	247,366	....	9 2	....
	II.	1,414,873	55 11	53,522	....	7 10	....
	III.	1,398,274	55 5	182,324	....	6 1	....
	IV.	1,178,826	49 11	41,170	....	....	0 5
1846—47	I.	1,889,537	56 8	438,879	....	9 0	....
	II.	1,619,215	67 8	258,064	....	19 7	....
	III.	1,258,387	79 9	42,437	....	30 5	....
	IV.	594,485	79 5	....	543,171	29 1	....
1847—48	I.	1,244,831	53 7	....	215,827	5 11	....
	II.	1,387,911	52 1	26,560	....	4 0	....
	III.	1,137,826	49 10	....	78,124	0 6	....
	IV.	1,494,409	49 0	356,753	....	....	0 8
1848—49	I.	1,407,241	52 6	....	43,417	4 10	....
	II.	1,127,918	46 5	....	233,433	....	1 8
	III.	997,331	45 0	....	218,619	....	4 4
	IV.	945,487	46 5	....	192,169	....	3 11
1849—50	I.	1,326,058	41 10	....	124,600	....	5 10
	II.	1,300,703	39 4	....	60,648	....	8 9
	III.	1,092,404	38 2	....	123,556	....	11 2
	IV.	1,181,026	41 11	53,370	....	....	8 5
1850—51	I.	1,239,288	41 3	....	211,370	....	6 5
	II.	1,046,980	38 4	....	314,371	....	9 9
	III.	1,075,560	38 3	....	140,390	....	11 1
	IV.	953,493	41 5	....	184,163	....	8 11
1851—52	I.	1,326,369	36 9	....	124,289	....	10 11
	II.	1,341,553	39 3	....	19,798	....	8 10
	III.	1,103,309	41 5	....	112,641	....	7 11
	IV.	1,074,616	42 2	....	63,040	....	8 2
1852—53	I.	1,323,499	40 0	....	127,159	....	7 8
	II.	1,351,310	44 9	....	10,041	....	3 4
	III.	1,109,712	44 8	....	106,238	....	4 8
	IV.	1,083,002	48 8	....	54,654	....	1 8
1853—54	I.	1,142,620	64 3	....	308,038	16 7	....
	II.	864,504	77 6	....	496,857	29 5	....
	III.	711,960	78 4	....	503,990	29 0	....
	IV.	681,985	72 0	....	455,671	21 8	....

TABLE VI.

Annual Fluctuations of the Probable Quantity of Home-Grown Wheat sold in England and Wales during the Eleven Harvest Years from September, 1843, to September, 1854, with the concurrent fluctuations of the Returns to the Growers; both in relation to the Average of the ten Harvest Years from September, 1843, to September, 1853.

Harvest Year.	Quarters.	Quantity Sold in the 290 Inspected Markets.	Assumed Quantity Sold; that inspected being $\frac{2}{3}$ ths of the whole.	Average Price.		Total Cost.	Cost in Excess of the Average Cost of Ten Years, 1843-4—1852-3.	Cost in Deficiency of the same Average.
		Qrs.	Qrs.	s.	d.	£	£	£
1843—44	I.	1,434,134	4,015,572	51	1	10,256,438		
	II.	1,411,371	3,951,838	51	8	10,208,908		
	III.	1,216,682	3,406,708	55	8	9,481,996		
	IV.	1,206,151	3,377,222	53	4	9,006,044		
			14,751,340	51	6	38,953,386	3,713,000	....
1844—45	I.	1,617,607	4,529,398	46	1	10,436,258		
	II.	1,611,683	4,502,710	45	5	10,277,610		
	III.	1,770,021	4,956,058	45	9	11,337,980		
	IV.	1,665,071	4,662,148	51	0	11,888,602		
			18,650,314	47	2	43,910,450	8,670,000	....
1845—46	I.	1,698,024	4,757,464	56	10	13,510,598		
	II.	1,414,873	3,961,642	55	11	11,076,088		
	III.	1,398,274	3,915,164	55	5	10,848,264		
	IV.	1,178,826	3,300,712	49	11	6,238,023		
			15,934,982	52	3	41,672,978	6,432,000	....
1846—47	I.	1,889,537	5,290,702	56	8	14,990,320		
	II.	1,619,215	4,533,802	67	8	15,339,362		
	III.	1,258,387	3,523,482	79	9	14,049,884		
	IV.	594,485	1,664,558	79	5	6,609,678		
			15,012,544	67	10	50,989,244	15,749,000	....
1847—48	I.	1,244,831	3,485,526	53	7	9,337,656		
	II.	1,387,911	3,886,150	52	1	10,120,180		
	III.	1,137,826	3,185,912	49	10	7,938,166		
	IV.	1,494,409	4,184,342	49	0	10,251,636		
			14,741,930	51	2	37,647,638	2,407,000	....
1848—49	I.	1,407,241	3,940,274	52	6	10,251,638		
	II.	1,127,918	3,158,160	46	5	7,329,562		
	III.	997,331	2,792,526	45	0	6,283,182		
	IV.	945,487	2,647,362	46	5	6,144,684		
			12,538,322	48	0	30,009,066	....	5,231,000
1849—50	I.	1,326,058	3,712,960	41	10	7,766,274		
	II.	1,300,703	3,641,966	39	4	7,162,516		
	III.	1,092,404	3,058,728	38	2	5,958,144		
	IV.	1,181,026	3,306,872	41	11	6,930,650		
			13,720,526	40	7	27,817,584	....	7,123,000

TABLE VI.—Continued.

Harvest Year.	Quar- ters.	Quantity Sold in the 290 Inspected Markets.	Assumed Quantity Sold; that inspected being $\frac{1}{4}$ ths of the whole.	Average Price.	Total Cost.	Cost in Excess of the Average Cost of Ten Years, 1843-4—1852-3.	Cost in Deficiency of the same Average.
		Qrs.	Qrs.	s. d.	£	£	
1850—51	I.	1,239,288	3,470,004	41 3	7,156,882		
	II.	1,046,980	2,931,544	38 4	5,618,792		
	III.	1,075,560	3,011,568	38 3	5,759,622		
	IV.	953,493	2,669,778	41 5	5,528,664		
			12,082,894	40 0	24,063,960	....	11,177,000
1851—52	I.	1,326,369	3,713,830	36 9	6,824,158		
	II.	1,341,553	3,756,346	39 3	7,371,616		
	III.	1,103,309	3,089,262	41 5	6,397,342		
	IV.	1,074,616	3,008,924	42 2	6,343,814		
			13,568,362	39 10	26,936,930	....	8,304,000
1852—53	I.	1,323,499	3,705,794	40 0	7,411,588		
	II.	1,351,310	3,783,668	44 9	8,465,952		
	III.	1,109,712	3,107,192	44 8	6,939,394		
	IV.	1,083,002	3,032,404	48 8	7,378,848		
			13,629,058	44 5	30,195,782	....	5,045,000
1853—54	I.	1,142,620	3,199,336	64 3	10,277,864		
	II.	864,504	2,420,608	77 6	9,379,706		
	III.	711,960	1,993,488	78 4	7,807,828		
	IV.	681,985	1,909,568	72 0	7,399,576		
			9,523,000	73 3	34,864,974	....	376,000

TABLE VII.

Total probable Supply of Wheat in the Markets of England and Wales during the Eleven Harvest Years from September, 1843, to September, 1854.

Harvest Year.	Estimated Quantity of Home-Grown Wheat Sold.	Foreign Wheat and Flour Entered for Home Consumption.	Total Probable Supply.	True Average Price obtained for British Wheat, as per Table VI.
	Qrs.	Qrs.	Qrs.	£
1843—44 ..	14,751,340	1,701,224	16,452,564	2.575
1844—45....	18,650,314	314,689	18,965,003	2.358
1845—46....	15,934,982	2,817,245	18,752,227	2.612
1846—47....	15,012,514	3,505,634	18,518,178	3.391
1847—48....	14,741,930	2,428,484	17,170,414	2.558
1848—49....	12,538,322	5,650,422	18,198,744	2.4
1849—50....	13,720,526	3,763,467	17,483,993	2.029
1850—51....	12,082,894	6,196,938	18,279,832	2.
1851—52 ...	13,568,362	3,711,058	17,279,420	1.991
1852—53 ...	13,629,058	5,930,460	19,559,518	2.221
1853—54....	9,523,000	6,022,451	15,545,451	3.662

The Effect of the Recent Orders in Council, in relation to English, Russian, and Neutral Commerce. By ALFRED WADDLOVE, D.C.L.

[Read before the Statistical Society, 15th January, 1855.]

THE object of the present paper is to point out the great change that has taken place in an important principle of our declared International Law, as manifested by the recent Orders of Her Majesty in Council, and to show that notwithstanding their important advance towards amelioration, they still justify proceedings which cause serious inconvenience to the passive and inoffensive neutral, are productive of but doubtful injury to our enemy, and inflict certain loss on ourselves; and hence to deduce a hope that the same spirit which has now so manifestly characterised the conduct of Great Britain, will still further develop itself, and that this country will eventually, in conjunction with the United States of America and the several powers of Europe, unanimously and unequivocally declare that the property of private individuals is as sacred on the ocean as it is on land.

In tracing the history of this subject, I have been led to select the Treaty of Utrecht as my first landmark, because by the terms of that Treaty were first distinctly laid down, acknowledged, and promulgated, the rights of maritime neutral nations, and because on the terms of that Treaty were based the several subsequent commercial relations established between the chief maritime nations of Europe, and which remained uncontroverted until the wars of the French Revolution. The words in point, of that Treaty are (Art. 17th): "And it is now stipulated, concerning ships and goods, that free ships shall also give a freedom to goods, and that everything shall be deemed to be free and exempt which shall be found on board belonging to the subjects of either of the confederates, although the whole lading, or any part thereof, should appertain to the enemies of either of their Majesties, contraband of war being always excepted." Here we have the principle that free ships make free goods, distinctly enunciated. It must, however, be borne in mind that this was but the stipulation of a treaty, a sort of special compact to exempt the parties to it from the application of the ordinary rule of International Law, viz.: "that the property of an enemy on board a neutral ship is good and lawful prize;" a maxim adopted by our own legal tribunals, as also by those of the United States of America, notwithstanding that country, from the very dawn of her existence as a nation, adhered to the opposite doctrine in her several commercial treaties.

When this Treaty of Utrecht was put an end to by the war of 1756, England abandoned its provisions, and thus fell back upon the rule of general International Law, and hesitated not to enforce in the most energetic and determined manner, her obnoxious belligerent rights; hence at length resulted the Convention formed against her, known as the Armed Neutrality of 1780. Notwithstanding, however, that formidable combination, composed of the United States of America as well as the maritime powers of Europe, England, trusting to her naval superiority, and conceiving that to permit traffic in her enemy's

merchandize would be injurious to her interests, resolved to seize, under the sanction of maritime International Law (as interpreted by her jurists, and laid down by her judicial tribunals), the property of her enemy when on the ocean, wherever it could be found, whether in the vessel of friend or foe; and thus, single-handed, she braved the storm of aggression with which she was assailed. The peace of 1783 for a time laid the question at rest, until the war with France consequent on the French Revolution, which broke out in 1793, again revived all the hostile feeling between that country and Great Britain. The right of seizing the enemy's property on board neutral vessels was again insisted on, and declared to be in accordance with the soundest principles of International Law, and the navy of Great Britain, much increased in number since the last war, aided by numerous privateers (a kind of legalized pirate now happily unknown), was actively employed in overhauling neutral vessels for the search of enemy's property.

The northern nations of Europe, with Russia at their head, again combined for the purpose of resisting this inroad on neutral rights. In the month of December 1800, a treaty renewing the confederacy for an armed neutrality was concluded between Russia and Sweden, to which Denmark and Prussia quickly gave their adherence. England, however, undeterred, still repudiated the maxim that "free ships make free goods."

There has always been an endeavour on the part of a country to foster and protect the commerce of its colonies; in her desire to accomplish this, France had, during her wars with England, invited other nations to trade with the French possessions in the West Indies, offering thereby to neutrals, a privilege during war, from which they were sedulously excluded during peace. The Prize Courts of this country had condemned that practice as far back as the year 1756, by a declaration of the principle "that a neutral has no right to deliver a belligerent from the pressure of his enemies' hostilities by trading with his colonies in time of war in a way that was prohibited in a time of peace." France, however, persisted in her course of action, and in the war of 1793 she again openly invited neutrals to trade with her colonies; although as an integral part of the French territory, they were to England hostile ground; England thereupon immediately issued instructions for the seizure of all vessels bringing goods from, or carrying supplies to, the colonies of her enemies. During the short peace consequent on the Treaty of Amiens in 1802, France reverted to her policy of monopolizing the trade of her colonies, and thus shut their ports against all vessels but her own; when, however, the war was in the following year resumed, she repeated her former invitation to neutral vessels, and thus resigned her colonial trade into the hands of nations not at war with this country, which, under the cover of their neutrality, indirectly promoted that trade and commerce which France herself, from her maritime weakness and fear of capture of her convoys, was incapable of assisting.

Thereupon the English Government published instructions which subjected to seizure all vessels carrying on trade between the colonies of France and any country, save the mother country, of the neutral

trader, and the then judge of our Prize Court (Lord Stowell) did not hesitate to enforce those instructions;* and moreover, that eminent American jurist, Chancellor Kent, although the practice strongly conflicted with the commercial interests of his own country, and was directly at variance with the principle "of freedom of ship, freedom of goods," did not hesitate to say, "To me the rule of 1756 seems one of the most moderate and unobjectionable of belligerent claims."†

When the kingdom of Hanover was in 1806 taken possession of by Prussia, at the instigation of Napoleon Bonaparte a proclamation emanating ostensibly from the King of Prussia, but virtually the act of Bonaparte himself, was put forth, declaring "the ports of the North Sea, as well as the rivers flowing into it, closed against British shipping and commerce, as they were at the time when the French troops occupied Hanover." As a measure of retaliation, the English Government declared the mouths of the rivers Ems, Weser, and Elbe blockaded, and also laid an embargo on all Prussian vessels and property in the ports of Great Britain; less than a month afterwards another more comprehensive order was issued, extending the blockade to all ports between the Elbe and Brest, thus including the ports of Holland, those of Prussia on the German Ocean, and the whole seaboard of France: this was derisively styled "the Paper Blockade." Hence resulted the Berlin and Milan decrees of Buonaparte, and the Orders in Council of the British Government, put forth, the former in 1806 the latter in 1807, the combined effect of which for a time paralyzed the industrial energies and all but annihilated the trade of Great Britain. After being in force for nearly five years, the Orders in Council were rescinded, in consequence of their manifest disastrous results, having been incontrovertibly proved by evidence taken before the House of Commons, and so clearly and forcibly demonstrated by Lord (then Mr.) Brougham in his well-known speech in Parliament. The history of these Orders in Council is thus briefly but graphically given in the *Edinburgh Review* for July 1812: "These Orders in Council took their origin in a decree promulgated by Bonaparte in Berlin, on the 21st November, 1806, by which, in the usual style of that personage, he declared the United Kingdom to be in a state of blockade; that all commodities of English origin, or belonging to Englishmen, were good prize; and that no ship from England or her colonies, or which should have touched there, should be admitted into any harbour belonging to France, or occupied by her troops. This bravado was followed on our part by an Order in Council dated 9th January, 1807, by which we interdicted neutrals from the whole coasting trade from one part of France to another; and in November 1807, a series of new orders was promulgated, by which we declared that we would permit no trade with France and her dependencies except through England; all neutrals bound to these countries being required, in the first instance, to touch at our ports and pay a duty to our Government; and that every vessel which had not a certificate of origin on board, should be declared lawful prize. To which extraordinary edict, France finally replied, by what has been called the

* "The Emmanuel."—Robinson's Admiralty Reports.

† Kent's Comm., pp. 84, 85.

Milan Decree, declaring in substance that any vessel which, in any way, submitted to our Orders of the 11th of November, or which had been searched in the course of her voyage by an English cruizer, should be considered as lawful prize. This is the sum of these unprecedented state documents, and the consequence was, that between the French Decrees and the English Orders, all neutral trade was effectually annihilated."

The effect of these Decrees of Buonaparte and the Orders of the British Government did not bear alone upon the commerce of England or even of Europe; their baneful influence extended across the Atlantic. The United States of America finding their maritime trade which they had carried on with neutral ports closed, or rendered highly dangerous from fear of the capture of their merchantmen or confiscation of their merchandise, at the hands of both France and England, passed an Act forbidding all friendly intercourse with either of those countries, so long as their restrictive measures remained in force.

This induced the English Government to rescind its orders so far as regarded American vessels and their cargoes, if American property. That relaxation, however, was based on the proviso, that the Government of the United States should no longer close their ports against our vessels, either of war or commerce. Before, however, these concessions were known in America, that country had already declared war with Great Britain, mainly on the ground of her offensive Orders in Council, but the right of search of American vessels for British seamen claimed and enforced by Great Britain, was a powerful stimulant in provoking feelings of hostility.

The right of search has always been a subject of contest and dispute; it is but natural that every nation should consider it an indignity to have its vessels stopped in their course, and overhauled under suspicion of having contraband articles on board, whether in the shape of merchandize or human beings, although it consists with reason as well as with the recognized Law of Nations, that in time of war, belligerents must insist upon that right if they would prevent their enemy from receiving from neutrals, or by their agency, war-like implements or materials. The Treaty of Ghent, concluded in 1814, established peace between Great Britain and America, but it is worthy of remark, that in that treaty no allusion is made to the maxim so firmly maintained by the United States that "free ships make free goods." Nor did it allude to the disputed right of search for British seamen on board American vessels. A general peace was established throughout Europe in 1815, but the several treaties consequent thereon, concluded between the different Governments of Europe, do not contain any new provisions or arrangements with respect to maritime commerce, nor do any of them revive any such conditions as might have been annulled or suspended by treaties or active hostilities. Thus England was left to carry out in any future war, her former recognized principles of international maritime law, with as much rigour or stringency as she had hitherto done, or to relax or abandon them as best suited her feelings, her policy, or her interest.

This brief historical sketch brings me to the Orders in Council

recently promulgated by the English Government, and the result or effects of them.

The words of the first Order in Council (dated 28th March), 1854, which bear on the present subject, are, "To preserve the commerce of neutrals from all unnecessary obstruction, Her Majesty is willing *for the present* to waive a part of the belligerent rights appertaining to her by the Law of Nations.

"It is impossible for Her Majesty to forego the exercise of her right of seizing articles contraband of war, and of preventing neutrals from bearing the enemy's despatches, and she must maintain the right of a belligerent to prevent neutrals from breaking any effective blockade which may be established with an adequate force against the enemy's forts, harbours, or coasts.

"But Her Majesty *will waive the right of seizing enemy's property laden on board a neutral vessel*, unless it be contraband of war.

"It is not Her Majesty's intention to claim the confiscation of neutral property, not being contraband of war, found on board enemy's ships; and Her Majesty further declares, that being anxious to lessen as much as possible the evils of war, and to restrict its operations to the regularly organized forces of the country, it is not her *present intention* to issue letters of marque for the commissioning of privateers."

Such is the mild language of the hostile policy of the present day. I need scarcely add that both in practice and theory an important change has been introduced into the exercise of our national belligerent rights. The flag of the neutral now covers and protects the property of the enemy—a maxim never before publicly avowed by Great Britain except under special treaty. The property of a neutral is also declared inviolable even on board an enemy's ship.

That, however, in itself, is no new expression of regard on the part of this country towards neutral property. In deference to the several writers on International Law, and in compliance with the decisions of our courts of justice, we have resolutely opposed the doctrine of "enemies' ships, enemies' goods." France, however, has on the other hand as steadily maintained it. And thus we have two maritime nations foremost in the path of civilization, each adopting a rule of International Law directly at variance with each other: an instance, and by no means a solitary one, of the uncertainty and flexible elements which compose, or are supposed to compose, the Law of Nations. In our present alliance with France, it became absolutely necessary that there should be uniformity of action respecting the exercise of belligerent rights, and thus the French Government has relinquished her claim to pronounce as liable to seizure the property of a neutral on board an enemy's ship; and England, on the other hand, has disclaimed her right to seize the enemy's property on board a neutral vessel. In further aid of these relaxations, it has been determined by both nations to grant no letters of marque.

Another important Order followed, dated April 15, which declared "that all vessels under a neutral or friendly flag, being neutral or friendly property, should be permitted to import into any port or place in Her Majesty's dominions, *all goods and merchandize whatso-*

ever, to whomsoever the same might belong, and to export in like manner, to any port not blockaded, any cargo or goods not being contraband of war, or not requiring a special permission." This Order directly justifies traffic with the enemy, both as regards British and neutral traders; but, practically, the British trader is excluded by reason of the fear of capture of his vessel if it enter the port of his enemy, and thus it is only by blockading the enemy's port that the British merchant can be put on the same footing as the neutral.

I now proceed to show, as far as I am able, the effect of these Orders in Council as evinced in the number, value, and tonnage of vessels captured by Her Majesty's ships, and the officers of the Crown, and condemned by a decree of the Admiralty Prize Court, to be sold for the benefit of the captors.

Since the commencement of hostilities with Russia up to the 1st of January, 1855, 92 vessels have been captured. Of these 40 have been condemned and sold as the property of the enemy; their gross tonnage amounted to 11,124 tons, and the gross proceeds of their sale, together with their cargoes, when not restored as the property of neutrals, amounted to the sum of 79,433*l.* 3*s.* 6*d.*

In addition to these, 8 were sold at Memel which produced 2,459*l.*, which, added to the sum of 79,433*l.*, gives the total 81,892*l.* These vessels were sold at Memel because being unseaworthy they would scarcely stand the voyage to England; 3 are still remaining there unsold. When these vessels were condemned, the English Government was requested by the Prussian Government not to publicly advertise their sale. In the peculiar manner in which Prussia has behaved during the present war, that request may have some significance; it was at once acceded to.

Of the 40 vessels sold in this country, the largest was of the burden of 600 tons and the smallest of 71 tons; the most valuable realized, together with her cargo, chiefly coffee, 9,993*l.* 1*s.* 9*d.*, and the least, 320*l.*: their average tonnage was about 278 tons, and their average value about 1,985*l.*

Although the individual value and importance of each vessel may be small, still collectively a large amount of property has been lost to the subjects of the Emperor of Russia. That loss, to be of any appreciable value to this country (since we must bear in mind that the sums produced by the sale of these vessels become the property of the captors, save some small portion which the Sovereign claims as droits of Admiralty, when the capture is made by others than the officers of Her Majesty's navy), ought to create a desire on the part of the Russian nation to be freed from the evils of war. But when we come to inquire upon whom these losses have fallen, and what class of the Russian population has been most affected by the want of the cargoes seized, we shall find that the seizure of these vessels affects but a small portion of the subjects of the Czar, and those not in a position to have much, if any, weight in influencing his arbitrary will.

Of these 40 captured vessels, 26 were laden with salt, 11 were in ballast, 6 laden with wine, 2 with wheat, 2 with tar and mats, 2 with coffee, 1 with molasses; thus fully two-thirds have had on board nothing but salt, an article used chiefly in curing fish for the winter food of the poorest: upon them, then, would fall chiefly the want of

that commodity. The owners of the captured vessels have been, for the most part, also the masters of them—Finlanders—whose all consisted of the small vessel they commanded, in which they made a voyage with a cargo of hemp or hides, returning laden with salt, from the coast of Lisbon or the Mediterranean.

As in literature and art, so in commercial enterprise, Russia is behind the other civilized nations of the world. Commerce is essentially the child of freedom; her powers of expansion and development are paralyzed by the withering influence of despotism or monopoly. Thus a mercantile marine, in the proper acceptance of the term, does not exist in Russia. True, her northern parts are for a great part of the year closed by ice, and many of her would-be harbours are too shallow to admit vessels of sufficient draught to rank as merchantmen; but her fiscal restrictions and the restraints of her absolutism far outweigh these natural impediments to her commercial development. In an able paper read before this Society in the month of June last,* entitled "Our Commerce with Russia in Peace and War," it was stated that of the ships seen in our ports, not more than 1 in 50 was Russian, and "that not more than one-sixth of the shipping entering at and leaving Russian ports, was registered as belonging to Russian subjects." Russia has not her merchant princes. Those interested in shipping and mercantile pursuits are of a different class. They do not, as with us, rank high in the social scale; their voice is little heeded, if heard at all, in the Imperial councils; and thus the injury done to the maritime commerce of Russia by this war, is a matter of little consideration with the rulers of that country.

From the returns of the Board of Trade, giving the number of vessels employed in the foreign trade of the United Kingdom, it appears that during the period of nine months ending the 10th of October, 1853, there were 369 Russian vessels which entered our ports, their tonnage amounting in the aggregate to 97,776 tons, which gives an average of about 267 tons each. From Holland during the same period, there were 1,160 vessels, with a gross tonnage of 131,760 tons. Prussia numbered 1,292 vessels, with a tonnage of 274,542 tons; and with the exception of Belgium, Spain, and Portugal, the shipping of Russia ranks lowest in the scale. The period here comprised, would include the summer months, when the Baltic would be free from ice, as also part of the year 1853, before the prospect of a war could have interfered with commercial relations.

M. de Tegobonski, who has written on the productive power of Russia, thus accounts for the tardy commercial progress of his country.† "Besides," he says, "the incomplete and defective means of our communication, the want of capital and the dearth of credit amongst private persons, all of which cramp the development both of our internal and external commerce, there are other causes inherent in our commercial classes which retard the progress of our commerce. The principal of these is the want of education and of information in a great number of our traders, who rarely possess that knowledge which is necessary to carry out great undertakings and combinations of any magnitude, of which the benefits can only be realized at an

* By Mr. Danson: see *Journal of the Statistical Society*, for Sept., 1854.

† *Etudes sur les Forces productives de la Russie*, vol. iii., p. 320.

uncertain future. The greater part of our merchants look only for large immediate profits, and often compromise their credit for momentary gain, and thus shake the confidence of their customers. Our merchants generally (that is, of Russia) are not sufficiently imbued with a true mercantile spirit, in the extended acceptation of the term, which to every man of intelligence means, that fidelity in all transactions and a well-established reputation are, ordinarily, the surest means of ensuring success, and that small but frequent gains on large transactions are worth more than large but sudden profits, which are realized to the injury of sound commercial enterprise."

Thus we have a Russian writer, in no way disposed to disparage his own country, compelled to admit that the traders of his country do not deserve the name of merchants, in the ordinary acceptation of the term.

Of the remaining vessels captured up to January 1st, 1855, 9 have been restored, 30 are waiting adjudication, of which 5 are claimed by one individual as being Danish property, he alleging himself to be a Dane, 19 involve the question of a breach of blockade: 6 having been captured in the Black Sea, have been taken to Malta as the nearest English port.

Of the claims preferred to the Prize Court for restitution of captured vessels, but 9 have, hitherto, been successful. It would have been useless for any Russian subject to have instituted a claim for the restoration of his vessel or cargo seized by his enemy; it has been, therefore, the practice either to sell the vessel at some neutral port and sell or transship the cargo, or when that has not been done, an ostensible sale has been made to a neutral shipowner, and thus, although the vessel was sailing under Russian colours at the time of her capture, she has been claimed as neutral property. The Danes have been the chief agents in such transactions, and so ingeniously have they managed their operations, that it has required much dexterity and penetration to unmask their deceptions. A question of this nature is now pending, which affects the capture of no less than 5 vessels alleged to be the *bonâ fide* property of one Danish subject. But in these transactions, neutrals must have incurred considerable risk if not serious loss, which has in some measure fallen on them instead of our hostile traders.

By allowing the neutral flag to protect the enemy's property, it became necessary to resort to the blockade. The only method by which, under the recent relaxation of belligerent rights, unrestricted traffic in our enemy's produce could be prevented, was by stopping its exit from his ports. This could be only effected through the operation of a blockade. This is neither the time nor place to define or quote authorities to show what amounts to a legal blockade; but I may, I trust, be permitted to say, that a blockade is oftentimes wholly nugatory both in law and practice. International legists tell us that the legality of a blockade depends upon the means of enforcing it with effect, which is something like saying that an offender is legally a prisoner to him only who is strong enough to secure him. The due notification also of the existence of a blockade, and a knowledge or presumptive knowledge of its existence on the part of those who violate it, is necessary to render them amenable to capture for their

act. An intricate and difficult question, involving proof of these facts with reference to our blockade in the Baltic, is now pending before the English Prize Court, in which virtually, the conflicting parties are the Danish, Swedish, Dutch, and English Governments.

Between the month of May and the middle of September 1854, there were boarded by Her Majesty's ships *Amphion*, *Conflict*, *Cruiser* and *Archer*, on suspicion of having broken the blockade of the Russian ports in the Baltic, 155 vessels, of which 17 belonging to neutral powers were detained and sent to this country for adjudication; of these 7 are Dutch vessels, 6 are Danish, 3 Swedish, and 1 belonging to Hanover. Here an obnoxious right of search was exercised, well calculated to excite the anger of neutral nations, and which the judicial inquiry now pending is not calculated to allay.*

To blockade a country not completely insular is of little avail; it is only its sea-board that is effected by it. The whole of its land frontier is free. I need scarcely exemplify this by the export of so much Russian property through the medium of Memel, Dantzic, Königsburgh, and other neutral ports. That a considerable quantity of our enemy's produce has reached even this country through neutral agency is obvious. From the returns issued by the Board of Trade comprising the nine months ending October 10th, it appears that in that period of 1853, there were imported of *dressed flax* 22,719 cwts., in that of 1854, 17,487 cwts.; of *undressed flax*, in 1853, 1,038,126 cwts., in 1854, 931,330 cwts. Of these several quantities, two-thirds may be assumed to have reached this country from Russia. In the commercial circular just issued by the Hull Chamber of Commerce, it is stated that in the present year, about 2,092 tons of Riga flax have reached us, as against 4,215 tons in 1853. This would show a falling-off of nearly two-thirds, but it must be borne in mind that what has reached us has found its way hither by neutral agency at an increased cost. As bearing on this part of my subject, I will, with your permission, read an extract from the Report of the Royal Flax Society of Ireland, read at Belfast in the month of November last.†

"When war was declared by Her Majesty's Government against the Emperor of Russia, it was at once apparent that the interruption of our commercial relations with that Empire might seriously affect the supply of the raw material of the British and Irish linen manufacture, as well as the seed which has hitherto been obtained from Riga, for sowing in Ireland. When it is remembered, that of an annual average import of 80,000 tons of flax, nearly 60,000 are brought from Russia alone, and that of the yearly import of flax-seed from two-fourths to three-fourths come from Riga, it will at once be seen that the cessation or diminution of the supply of these articles as a consequence of the war might be productive of serious inconvenience to the linen manufacturers of the United Kingdom and the flax-growers of Ireland. So far, however, events have turned out differently from what was anticipated; the permitted import of Russian produce through the ports of Prussia, having secured even a larger supply of flax than usual: the quantity received during the

* Since this Paper was read eight of their vessels, viz.: 3 Danish, 3 Dutch, and 2 Swedish, have been condemned for violating the blockade of Riga.

† Given in the "*Times*," November (*circa*) 25.

year ending 5th of October last being 86,837 tons, from all countries, against 74,418 tons in the same period between 1852-3."

It has also been authoritatively stated, that during the present war 60,000 tons of flax have passed through Memel for exportation. Of *dressed hemp* there were imported in the nine months ending October 10th, 1853,—18,625 cwts., in 1854,—11,605 cwts. Of *undressed hemp*, in 1853,—548,362 cwts., in 1854,—382,775 cwts. Of *flax seed and linseed* in 1853, we imported 635,099 cwts., in 1854, 467,523 cwts. Of *tallow*, in 1853,—538,182 cwts., in 1854,—448,993 cwts.* One half at the least of these articles we derive from Russia, and hence it will at once be seen, that notwithstanding the war and the blockade of the ports of Russia, a vast quantity of her produce has reached this country.

It has been said that last winter, 102,000 casks of tallow were shipped and reached this country from Russia; whereas to the same date this year, 35,000 casks have been forwarded, of which only 13,000 have been shipped, and that the remainder is finding its way overland to neutral ports, a distance of about 600 miles. The tallow shipped from St. Petersburg to this country has been in 1851, 101,304 casks; 1852, 82,561; 1853, 97,355; 1854, for a corresponding period, 68,925 casks were dispatched overland, of which 17,000 have arrived.†

In proof of the view taken by Russia herself, I will read an extract from the St. Petersburg Gazette, of 20th September, 1854.

"It is known that an enormous quantity of tallow is being prepared in the nine melting-houses at Samara. This article used to find its principal vent in our Baltic ports, from which it was, for the most part, sent abroad. For the wants of the naval service this year 453,000 poods of tallow had been prepared, worth nearly a million of roubles. While the tallow was being melted and refined the end of the winter came, and at the same time the complete rupture between Russia and England. Our merchants took the alarm on the supposition that tallow this year would not be in demand from abroad. Navigation opened and they sent, nevertheless, their goods by the Volga to Rybinsk. In the spring our trade found another outlet. It is true tallow was not sent to the Baltic ports, but it was by land to Prussia. From Rybinsk they sent it by small steamers to Iver, and beyond down the Volga. Thence it was taken on by land carriage to the frontier; the carriage cost 31 silver copecks per pood. In this way our merchants got rid of all their tallow not without profit, and political events had no influence on the movements of commerce. Our tallow will reach England, but by another route; the English will have to pay a higher price for it than they would from us direct. Such is one of the advantages obtained by England in consequence of her declaration of war."

This coming from a Russian source must be taken with some mistrust; still being put forth in the organ of the Government in a country in which no one is permitted to think or reason for himself, it will doubtless have its weight.

The cost of carriage overland, whether by canal or road, would

* Mr. Danson's paper "On the Effect of the War on Commerce," p. 208.

† Messrs. Smith and Charles's Circular in "Times," Nov. 7th, 1854.

exceed that of sea-carriage, not only by reason of the greater distance the articles must travel, but from various other causes, and hence their price must be enhanced and a loss inflicted somewhere. Upon whom then will this loss fall, on the purchaser or the producer? On the reply to that question will depend, whether Russia or those nations which require and receive her produce, will, in one point of view, suffer most by the blockade. In an article on this subject in the "*Manchester Guardian*" of August last, it was stated "it would be a great mistake to conclude that Russia suffered nothing by the blockade. Of raw produce, which constitutes the great bulk of the exports of Russia, the costly transport by land to the German frontier, and then its costly transport to a German port, must leave a very small portion of the price which it there commands to the lot of the Russian producer." It may savour of presumption to question these remarks, coming from so weighty an authority, but is it not the fact that the price demanded for manufactured produce is in a great measure regulated by the price of the raw material of which it is composed, and whom but the consumer does this increase eventually affect? It surely cannot affect the producer; he gets his price, and the extra cost of carriage or freight falls on those who purchase from him, who in their turn look for repayment by the increased price which they find themselves compelled to charge their customers. This is the daily result of the ordinary dealings of trade; common store candles, *e.g.*, have risen from 6*d.* to 9*d.* per pound, (50 per cent.); hair brooms and brushes, again, have risen much in price; and who but those who require those articles pay the increased cost?*

To prevent by a blockade the export of our enemy's produce by sea and not to attempt to prevent it by land, would seem but an anomalous proceeding and one of much injury to our own commercial interests; it has therefore been urged in some quarters, that we should prevent altogether the importation of Russian produce, either through the neutral territory of Prussia or any other country. This could only be done by demand of a certificate of origin—a document easily simulated and of little value as evidence as to the real national character of merchandise. But to those who would advocate this more stringent mode of excluding our enemy's produce, I would venture to put the question, whether the consequences of such a measure would not, whilst striking a blow at the commercial interests of Russia, recoil with ten-fold force on ourselves. To exclude altogether from our markets the raw materials of hemp, flax, and tallow, would but divert those articles to a channel which would carry them to the United States of America, the Hanse Towns, and all other States not embroiled in the present war, which may as yet be said to be the whole of the world, save England and France. The result would be, that we should inevitably lose the manufacture from the raw produce of Russia, which we carry on to a great extent.

During the nine months ending October 10th of the present year, we exported 272,448 cwts. of cordage and cable; 2,904,222 yards of linen; 354,747 gallons of linseed, hempseed, and rapeseed oils; and of candles 127,729 pounds: these are severally manufactured by us

* It has been calculated that the extra cost of Russian produce, occasioned by the necessary land carriage, has exceeded 2,000,000*l.*

chiefly from Russian raw material, and to deprive us entirely of that material, would go far to close the mills and workshops engaged in that portion of our trade. Conceive for a moment the importation of cotton into the port of Liverpool being from any cause suddenly stopped; what would be the fate of the mills of Manchester? These are consequences which it would be well for those who urge the total exclusion of Russian produce to consider. The disastrous results consequent on the Orders in Council of 1807, bear incontrovertible testimony to the baneful effects of the complete exclusion of foreign produce from our shores. It is true the granting of licenses might be resorted to, but the experience of the fraud and perjury practised during the last war respecting them, would preclude every honest mind from adopting so pernicious a system.

The inferences that I would draw from these remarks are: 1st. That the loss consequent on the confiscation of Russian vessels and their cargo, has not affected that nation at large, but that the loss has chiefly fallen on a comparatively poor and insignificant portion of the population, and that the nobles and the higher classes are not yet sufferers thereby, and that there is, therefore, no influence to bear upon the will of the Emperor so as to induce him to seek for peace. 2nd. That the blockade of the ports of Russia has not, in the Baltic, prevented the export of her produce nor the import of such articles as she imperatively requires, but has excited feelings of hostility on the part of the northern neutral powers of Europe towards England, which tends to estrange them from an alliance with her. 3rd. That the recent Orders in Council, although abandoning much of that intolerant spirit which has heretofore characterized the exercise of our belligerent rights, might, without injury to ourselves, advance still further in the path of lenity. That it would be sufficient to blockade our enemy's ports for the purpose of preventing the ingress or egress of the munitions of war, and disabling his ships of battle, but that his mercantile vessels should, if wholly engaged in commerce alone, be allowed to pass and repass unmolested.

In conclusion, I would remark that the American Consul in this country, writing, on the breaking out of the present hostilities, to the Minister for Foreign Affairs in New York, states, that in an interview with the Foreign Minister of this country, the latter said, "that he had found great difficulties in overcoming the practice of England for so many years, and their unvarying judicial decisions; but that modern civilisation required a relaxation in the former rules, and that war should be carried on with as little injury to neutrals as was compatible with the interests and safety of belligerents."

In addition to this, the last Message of the President of the United States of America contains language of much import as bearing on this question. That country, as is well known from the day it renounced its allegiance to England and became an independent nation, has rigidly maintained and adhered to the maxim "free ship, free goods." President Pierce, in his Message dated 4th December last, tells us that when, on the alliance of England and France in hostility to Russia, those two countries determined to exempt from seizure neutral property on the ocean, the United States and Russia entered into a Convention guaranteeing the same privileges to their mutual

subjects, and that the Kings of Prussia and of Naples and Sicily expressed their readiness to adopt the same course; the former, however, qualifying his assent by the suggestion that the practice of privateering should be wholly abandoned. But to this the American authorities were unwilling to assent, assigning as a reason, their inability to cope with other nations, in the case of war, whose navy was larger and more powerful than their own, unless by resorting to reprisals by means of their private mercantile marine. As a measure of self-protection and thus of national policy, we can scarcely object to such a course of reasoning; but in order to show the sense entertained by the United States on the general question of the seizure by belligerents of private property, the President adds, these significant words: "Should the leading powers of Europe concur in proposing as a rule of International Law, to exempt private property upon the ocean from seizure by public armed cruisers as well as by privateers, the United States would readily meet them upon that broad ground."

Here is a direct invitation on the part of the United States of America to the maritime powers of Europe, to join in freeing commerce from the evils of war. France has relaxed her rule, that enemy's goods makes an enemy's ship. England has proclaimed that enemies' property on board the vessel of a neutral is free from seizure. Thus we have three of the most powerful maritime nations in the world, advancing simultaneously in the path of charity and civilization. Let us then augur from this, that the day is not far distant when commerce will be unaffected by war, and international law will be freed from the reproach that it is but the law of the strongest, and that belligerent rights partake chiefly of the freebooters' maxim, "that they may get who have the power, and they may keep who can."

As a further source of hope for such a result, I would allude to the contemplated Congress at Paris. The Exhibition about to take place there, affords a favourable opportunity for cementing the mutual amity which now so firmly exists between France and England, and of deriving some other benefit than that of the defeat of our common foe. An effort is I understand to be made, to effect an assimilation of the commercial law of all nations. The Emperor of the French has expressed himself favourably disposed towards such a consummation. Doubtless one subject of consideration will be the protection of private property from the spoliation of hostile nations. England can scarcely recede from the spirit of lenity she has so recently established; France has already shown her desire to forego the exercise of her hitherto claimed belligerent rights; and the other powers of Europe, together with America, will cordially join in an expression of principle which will at once liberate the commerce of the world from baneful restriction, and tend to establish that freedom of intercourse the interruption of which is unnecessarily made an additional evil to the many that follow in the dismal and melancholy train of war.

Statistics of Nice Maritime. By COLONEL SYKES, F.R.S.

[Read before the Statistical Section of the British Association for the Advancement of Science at Liverpool, 22nd September, 1854.]

NICE (in Italian, Nizza) MARITIME, a town of very early origin, is situated in latitude $43^{\circ} 41' 17''$ north, and longitude $4^{\circ} 56' 28''$ east of Paris, in the valley of the mountain torrent of the Paglion, at its embouchure. In the midst of the town, or rather between the town and the harbour, stands an isolated dolomitic hill, now cut into shady walks and planted with shrubberies, but formerly crowned with a château or fortress, often subjected to the vicissitudes of the fortunes of war, and the scene of many striking events of both a political and social character. The territory of Nice is the western extremity of the ancient Ligurian republic; and it is separated from France by the river Var. Nice has been successively subject to the control of the Phœnicians, Védiantians, Romans, Bourguignons, Visigoths, Lombards, and Dijons; the Kings of France, Kings of Arles; Counts of Provence, Counts of Barcelone; the princes of the House of Anjou, Joan of Naples, and finally to the House of Savoy. Very few of the numerous facts of history can legitimately come within the compass of statistics; and I shall limit myself, therefore, to noticing only some striking points. The Phœnicians are supposed to have been the first settlers, and to have called the place Nika, from having achieved a victory over the Ligurians, who had advanced to drive them out. When Cæsar invaded Gaul, he found a respectable arsenal already established, and it proved of service to him in his designs. The Roman governors, however, appear ultimately to have made the slope of part of the neighbouring range of hills, about thirty minutes' drive up the right bank of the Paglion, now called Cimiès, and anciently *Cemenelion*, the seat of government, as is testified by the existing remains of an amphitheatre, an aqueduct, baths, and foundations of buildings. The Lombards destroyed this town in 577. Augustus removed the arsenal from Nice to Frejus; and from this period the importance of the place diminished. After the fall of the Roman Empire, Nice had many masters, until, in the fourteenth century, it depended on Joan of Naples; but she being unable to afford it aid or protection in the conflicts going on with Louis of Anjou, she released the people from their feudal obligations, and gave them permission to choose any prince for master whom they might think most capable of affording them protection; and in consequence, in 1388, they adopted, as their prince and chief, Amédée VII, Duke of Savoy; and it has remained with this family since that period, with the exception of the interval from 1792 to 1814, when it was annexed to the French Republic, and made head of the department of the Maritime Alps. The fall of Napoleon occasioned its restoration to the Savoy family.

In 1538, a remarkable meeting took place in Nice, nominally on

the subject of the peace of Europe, but really each party in pursuit of his own interests, between Francis I. of France, Charles V. of Germany, and Pope Paul III. This meeting was commemorated by the erection of a large marble cross, which has given the appellation of Croix de Marbre to the western part of the town, where it now stands. The French threw it down in 1792; but the Countess of Villeneuve, in 1810, raised it again at her own expense. In 1543, the French, under the Duke d'Enghien, besieged the château by land; while the Turks, under Barbarossa, beleaguered it by sea. This siege developed one of those instances of female patriotic heroism which have characterized every country and age. A breach was made and unexpectedly stormed while the garrison was taking its meal; the place was likely to be carried; when the wife of one of the soldiers, named Caterina Segurana,* and with the sobriquet of Malfaccia, from her extreme plainness, rushed to the defence, struck down a standard-bearer who was passing the breach, seized the standard, and, by her energetic example, so stimulated the troops, that the assault was defeated with great slaughter. In 1690, the French, under Marshal Catinat, besieged the château, and a bomb having fired the magazine in the donjon, which was built by the Arragonese in 1176, the place capitulated; and in 1706, the Duke of Berwick finally demolished the fortress; and the locality, as I previously said, is now devoted to peaceful enjoyment and sylvan beauty.

Physical Features.—Nice is situated at the bottom of a bay, the promontories of which are Antibes in France to the west, and that of Villafranca, the ancient Olivula, to the east; the latter runs rapidly into the ridge of Montboron, 731 feet high, and is continued in Turbia (a corruption of Trophœa Augusti, the remains of the trophy

* The Baron de Bazancourt in his *Nice*, 1853, quotes (p. 346), the President Lambert, and says, Durant in his *History of Nice* says that in the MS. notes of Jean Badat, now at Turin, Badat saw and knew Catherine Segurana, and describes her as excessively ugly and repulsive. Scalier also, in his *History of Nice*, still in MS., and bought by the town, says that in 1543, when the town and fortress were besieged by the Turks, under Barbarossa, by sea, and the French, under the Duke d'Enghien, by land, a breach was made in the town walls at the gate Pairolière and the tower Sincaire, and the besiegers, on the 15th August, mounted the breach: a woman of the common class, called Catherine Segurana, but nick-named Malfaccia in patois (Malfatta in Italian) from her ugliness, was taking her soup with her husband in the bastion when the assault commenced, rushing into the midst of the fray she seized a Turkish standard from the hands of the ensign, killing the bearer, and this example of courage and devotion was so effectual that the assault was repulsed with great loss. From Lambert not mentioning this affair some have looked upon the whole as apocryphal, but Jean Badat speaks of a personal knowledge; moreover there is an armless and defaced bust of her in the Hôtel de Ville, and Scalier, in his MS. history, says this bust was over the gate Pairolière, with the inscription:

Nicæna Amazon,
Irruentibus Turcis occurret;
Ereptoque vexillo,
Triumphum meruit.
1543.

But the clearing away, in 1782, of the gate and ramparts to form the Place Victoire, occasioned the removal and dilapidation of the bust—the face hard and severe, with strongly marked lines.

monument of Augustus being there), and Turbia again is overlooked by Pacanaïa, 1,950 feet high, constituting part of the Maritime Alps, or, according to some authorities, the Apennines, it being asserted that the Apennines have their origin at the point of crossing of the Corsican and Pyrenean systems to the east of Mount Clapier, one of the culminating points of the Alps, 3,070 metres high, the first inflexion of which is the Col de Tende, 1,795 metres high; and thence the range is considered to run to Naples. Passing round to the north and west from Pacanaïa, and looking up the valley of the Pallon, Monte Calvo is seen, with its bald head as its name implies, 2,800 feet high. Further to the west, the ridges occur in which the fountains and valleys of Mouraille, Fuonte Santa, Templi, Sombre, and Magnan are situated; and rising behind these western ridges the Estrelles of France are seen; and in the extreme distance, behind the point of Antibes, and nearing the sea, the isolated mountain of Monte Rosso, a mass of *red* porphyry, bounds the horizon. All the low hills, ridges, and mountains, the latter nearly to their summits, are covered with perennial verdure; and the productions of every zone are seen on their slopes, flanks, and bases, from the sugar-cane, date, pomegranate, orange, millets, &c., of the tropics, to the vine, olive, loquat, apple, pear, chesnut, of temperate climates, to the northerly oak, birch, beech, and pine, bordering eternal snows and glaciers. In fact, a spectator standing upon one of the promontories, or, indeed, on the shore, in some places on the line of coast called the Corniche, between Genoa and Nice, may command in one point of view the vegetable productions of every zone of the earth, as the sight is carried up from the burning shore to the snowy peaks of the Alps.

Geological Features.—For notices of the geology and natural productions of Liguria, embracing Nice, I am enabled to avail myself of a very valuable and hitherto untranslated work presented at the eighth meeting of the scientific men of Italy at Genoa in 1846. It was the result of the combined labours of a commission of scientific men, who mutually contributed the stores of their knowledge in various branches of science, to render a report worthy, by its completeness and accuracy, of the acceptance of the meeting to which it was offered. It consists of four parts, in three volumes. The first part comprises Unorganized Nature; the second part Organized Nature; and these two parts make the first volume. The third part treats of Man (Ethnology); and the fourth part of the monuments and works of art, constituting the third and fourth volumes. The first volume contains a geological map of Liguria, and tables of animal and vegetable products, and topographical maps. The Marchese Lorenzo Pareto, assisted by Professor Garibaldi and Signor Fortunato Ciscia, had the compilation of the first part; and the natural history was contributed by the Marchese Spinola, assisted by the Marchese Carlo Durazzo, Professors Sassi and Amotaris, and Signor Gio. Batta. Verany. The third and fourth parts were presented respectively by the Marchese Camillo Pallavicino and Signor Cristoforo Gandolfi, aided by committees. With such ample and trustworthy sources of information in print, it is to be regretted that they are not available to the English public in an English form

For myself, in the present paper, I must not venture to do more than give a hasty analysis of the facts in geology and natural history, which have a necessary relation to Nice as a part of Liguria. Genoa is distant 180 miles from Nice, and the intervening tract consists of a succession of mountain spurs from the Alps, which run out into the sea, forming headlands and deep narrow bays at sea, and valleys on shore. The rocks, almost exclusively near the shore, are of Macigno Jurassic limestone, granular limestone, and dolomite; and the only patches of granite, three in number, which appear in Pareto's map, are near to Savona and Varazze. The Colle de Tenda, 1,795 metres high, and Monte Gros, 2,520 metres high, in the central chain, are respectively schist, Macigno, and calcareous schist, with nummulites on the flanks and ridges. Between the Colle de Tenda and Ponte Bernardo and Borsezo, on the French borders, several rivers have their origin, which run different ways—the Stura and Grana, north-east towards the Po, the Tinea and Varo, south to Nice, and the Durance, south-west through Provence. It is in this region some Italian geographers consider the Apennines to commence, and not to the east of Genoa. Some equivalents of the green-sand are found within a radius of a few miles of Nice. Monte Calvo is a mass of dolomite; but on the eastern flank green-sand fossils are found. On the western flank, brown arenaceous limestone (tertiary), and on the flank of Monte Calvo, at 2,800 feet, bony breccia, exist. At Fuonte Santa, on the road to Genoa, dolomite is flanked by green-sand fossils: the same occurs at St. André, up the Paglion, the green-sand beds being of arenaceous, argillaceous, or marly limestone. At the Grotto di Falicon dolomite appears, and compact light-coloured limestone, with the equivalents of green-sand. Westward of Monte Calvo, tertiary deposits, consisting of rolled pebbles, appear at Maguan, le Vallon Sombre, in the neighbourhood of St. Barthélemy; and at the point of Antibes, and at Magnan and Madelaine, blue clay crops out with fossil shells. Osseous breccia is met with, in connexion with dolomite and indurated light coloured limestone, at Cimiés, and in a fissure in the dolomite and compact light-coloured limestone of the castle hill bones were met with embedded in red marl, which Cuvier pronounced to be those of the horse, of deer, and of a *felis*, approaching the lion. Nummulites are met with at Beaulieu and Eza.

Montboron, 542 feet high, which separates Nice from Villa Franca, and on the promontory of which is situated the lighthouse, consists of dolomite and compact light-coloured limestone: the ridge rises to 751 feet, where is placed Fort Montalban. Midway down the descent, on the east side to Villa Franca, the limestone comes to the surface, and a considerable area is water-worn (although there is not any fall of water now) into fantastic small holes, basins, cauldrons, and other forms so well known to result from the attrition of pebbles moved by eddies of water. Villa Franca, which is only thirty-five minutes' drive from Nice, is situated in a beautiful snail, almost land-locked, bay. The cape of the opposite shore, St. Hospice, comprises green-sand equivalents; and at Beaulieu, at the eastern side of the peninsula of Villa Franca bay, a raised beach is met with

twenty feet above the present sea-level, with recent shells; and, close by, minute nummulites and gryphites occur in *contorted* strata. Not extending our notice beyond Mentoni, six hours' drive on the Genoa road, we find Eza (dolomite and compact limestone), the sanctuary of Laghet, marine arenaceous limestones, with a tertiary crest behind La Trinità; then La Turbie (ancient Trophœa Augusti), dolomite and compact indurated limestone; Monaco, the ancient Portus Herculis, dolomite and compact limestone; and, finally, Mentoni, where the brown arenaceous limestone strata are *perpendicular*. Roquebrune, a village a short distance before reaching Mentoni, stands upon a pudding-stone rock of marl, limestone, and dolomite pebbles. Following the road to Turin from Nice, up the valley of the Paglion, the limestone beyond the château of St. André is stratified in thin beds, the strata dipping in different localities at different angles, showing a great amount of *disturbance*, which is, indeed, observable everywhere around Nice. Reviewing the geology of Nice and its neighbourhood, we find a characteristic feature in the dolomite, which is indurated, massive, unstratified, destitute of fossils, and underlying the limestone rocks, as if it were irruptive. The limestones rest upon the dolomite, are stratified, fossiliferous, contain dog-tooth spar, and range in character from crystalline (not marble) to arenaceous and argillaceous; and in hardness, from compact to friable and pulverulent. The gravel of the beach is destitute of siliceous pebbles, and consists entirely of rolled fragments (a lenticular form prevailing) of the above rocks. The equivalents of green-sand and tertiary deposits occur; but granites, schists, greenstones, porphyry, and the trap rocks (except in the three instances mentioned) are not met with in the mountains of the coast, although the trap and red porphyry of the Estrelles and of Monte Rosso are visible from Nice. It may be noticed that the dolomite forms a durable and excellent building-stone, and the compact limestone is equally good.

Nice and the Ligurian territory are rich in the products of the vegetable kingdom, but it must suffice to enumerate the chief families and species.

Vegetable Kingdom.—There are enumerated 124 families, 2,231 species, and 151 varieties. The families most numerous in species are the Cruciferae, 104 species and 5 varieties; Leguminosae, 189 species and 19 varieties; Umbelliferae, 109 species 7 varieties; the Compositae,* 282 species 14 varieties; Graminaceae, 185 species and 5 varieties; Labiatae, 89 species and 3 varieties; Ranunculaceae, 65 species 14 varieties; Sileneae, 44 species 3 varieties; Rosaceae, 44 species 6 varieties; Campanulaceae, 30 species; Boraginiae,† 36 species 2 varieties; Antirrhinae,‡ 45 species 1 variety; Primulaceae, 25 species 1 variety; Euphorbiaceae, 30 species 5 varieties; Orchideae, 52 species 1 variety; Asparageae, 15 species; Gigueaceae, 55 species 1 variety; Junceae, 22 species; Cyperaceae, 69 species and 3 varieties; Cupuliferae, 12 species; Coniferae, 18 species; Violaceae, 12 species; Geraniaceae, 18 species; Lineae, 13; and Pomaceae, 14 species. The

Nettle (*Urtica urens*), the fig, mulberry, hop, and bread-fruit, belong to the same family of *Urticaceae*.

* Aster, &c.

† Heliotropium, &c.

‡ Digitalis, &c.

Cryptogameæ family present Ferns, Lichens, Fungi, Algæ, Con-fervæ, &c.: the Zoöphytes, Sertularini, Cellariani, Millipores, Corals, Sponges, Alcion, &c. One species of Fig and two Cucurbitaceæ only, Oleaceæ seven, Laurineæ (*Laurus nobilis*), and two Palms. The reputed Aloe, which makes so picturesque a figure in Nice land-scapes, is the *Agave Americana*. The two Palms are the *Chamærops humilis* and the *Phoenix dactylifera*. The Coniferæ embrace seven Junipers, and seven Pines, the *sylvestris* at the head, and the *Pinus pinæ*, with its edible kernels, the sixth in the list. There are also two *Abies*, *excelsa* and *pectinata*. And I saw the Dewdar in the garden of the Villa Arson. There are seven species of Oak (*ruber*, *ilex*, *Apennina*, &c.), one Birch (*sylvatica*), one Chesnut, and one Hazel-nut (*Corylus avellana*). The Mulberry is the *Morus nigra*, and the Fig the *Ficus carica*. The Poplars are the *Populus tremula*, *alba*, *nigra*, and *pyramidalis*. The Labiatae comprise the Lavender, Mint, Rosemary, Sage, Thyme, Hyssop, &c. In the Solanaceæ we find the Potato, but not of a superior kind; the Egg-plant, the Belladonna, Hyoseyamus (2), and Datura (2). In the Convolvulaceæ the sweet potato is not mentioned. There appears only one species of Olive, *Olea Europæa*. One Rhododendron (*ferrugineum*). Amongst the Umbelliferæ the tropical *Coriandrum sativum* appears to thrive. The Prickly Pear (*Opuntia vulgaris*) grows abundantly, also the Myrtle, on the hills. The European fruits, apples, pears, plums, and peaches, are plentiful, but with less flavour than farther north. The Pomegranate fruits well (*Punica granatum*), also the Loquat of China.* There are eleven Roses. Green peas are served in January. The Trifolium and Medicago flourish in the winter as fodder. The Asiatic Zizyphus grows robustly; twelve Geraniums and thirteen Linums; and the fibre of the *Linum usitatissimum* is seen on the distaff of most peasant-women. Of the Vine, the only species is the *Vitis vinifera*. Of Violets, there are twelve species: some of them are strongly scented, and they are cultivated for extracts. Of Mustard (*Sinapis*), five species. The Orange family is limited in its varieties; most of the fruit is small, and the skin, as well as that of the lemon, is thick, and the fruit is not so fine as in Italy or Spain.

Molluscos Animals.—Zoöphytes lead to Molluscos Animals, the families and genera of which, both naked and housed, are numerous, and many of them are prized as food. Of the lowest grades, twelve species of Polipes are enumerated; ten of *Acalephæ fisilici* (Sea-nettles), thirteen of *Acalephæ Medusici*, Echinodermes (radiated animals, sea-eggs, sea-urchins, &c.), sixteen Asterici, Echinici and Oluturici, eight. The Annelides (leeches, worms, &c.), footless, antennated, and sedentary, comprise more than forty genera and species. Of the Medusæ there are thirteen species.

The *Acephala testacea* are numerous, thirty-six genera and eighty-three species; and one of them, *Lithodoma lithophaga*, vulgarly called the Dettao de Mâ, is introduced at most tables and esteemed. The scourge of ships, the *Teredo navalis*, belongs to the same order. Of the *Acephala libera* (snails without shells): two are vulgarly called Brugnion and Tettinotti (*Ascidia vera*). The ovaries of the Brugnion are eatable; and the Tettinotti serve fishermen as baits. The Gas-

* Mespilus loquat.

teropods number eighty-nine genera, and about 269 species. Thirty-one species of *Helix* are named, and many species are eaten. The naked Gasteropod (*G. patricoides*) is prized in Nice, but disliked in Genoa. The Cephalopods number thirteen genera only (*Sepia*, *Loligo*, *Octopus*, &c.), and thirty-one species; but individuals are numerous and are most useful to man in supplying healthy and exquisite food, such as the *Totani*, *Sepiæ*, and others which are not too large. The Italians extract an ink from the *Sepia*. The Crustaceæ comprise more than 100 genera and species; but the Land Crab, although found in Tuscany, is not seen in Liguria.

Fish.—The ichthyology of Italy embraces 670 species of fish, according to the Prince of Canino; and of this number, 212 species are met with between Genoa and Nice; and there is reason to believe they amount to 280, including the fresh-water fishes. About two miles distant from the coast extends a long line of Algæ, principally of the *Caulinia oceanica*, like a marine wood, which affords stores of food for the fish; but the fishing extends beyond this to a distance of about twenty-three miles, where, the mean depth of the sea being about 800 metres, fishing ceases, and the region of sharks is entered. Although the great bulk of the fish is characteristic of the Mediterranean, there are some common to the Northern Ocean and the Cape of Good Hope, and one which is found in the Red Sea. Several of the species migrate from one part of the Mediterranean to the other, according to the season; and amongst others, the Sardella or *Clupea Sardina*, and Red Mullet (*Apogon rex mullorum*—Cuv.), or *Castagneria russa*, which, however, is only looked upon as of the third quality. One hundred and ninety-two patois names are given of all the fish found. The chief are the Sole (*Solea vulgaris lingua*), and two other species; the Murin (*Centrolophus pompilius*), which is called the “king of fishes” at Genoa, and it is prized accordingly. Authors, who have spoken of it at Nice and Rome, compare it to indifferent flesh-meat, a prejudice, however, which arises from its having been boiled in its skin, which has a scent. It feeds upon Medusæ, lives in deep water, and attains a weight of fifty pounds troy. The Cavun (*Mullus barbatus*), Figao (*Sciæna umbra*), Impeatû (*Luvarus imperialis*), Luasso (*Labrax lupus*), Lûxerna (*Polyprion cernium*), Murmua (*Pagellus mormyrus*) Oa (*Sparus aurata*), Ombrinha (*Umbrina cirrosa*), Pagau (*Pagellus erythrinus* and *Pagrus vulgaris*), Re (*Lampris guttatus*) Rumbo (*Rhombus maximus*, two species), Rumbo bastardo (*Bothus rhomboides*), Sagao veaxo (*Sargus Rondeletii*), San Pè (*Zeus faber*) Sardinha (*Clupea sardina*), the young of which is called Gianchetto, and the middle growth Pazetta. Great quantities are salted and barrellled. The flavour of the fresh sardine is very sweet, and free from the oil of the herring of England. The young Gianchetto eat like white-bait. Serretto (*Lichia radiata*), Spa (*Xiphias gladius*), excellent, and attains a weight of 500 lbs. troy. Treggia veaxa (*Mullus surmuletus*). These are the whole of the fish reckoned of the *first quality*; and the tables at Nice exhibited very few of them. All the rest of the 192 species are of the second, third, and fourth qualities, and not fit for a good table. The following are the largest fish caught, but none of them are good. The Müggio (*Notidanus cinereus*), 500 lbs. troy;

Caguassun de fundo (*Odontaspes ferox*), 600 lbs.; Casi (*Squalus glaucus*), 2,000 lbs. Ancina (*Engraulis encrasicolus*) is salted in great quantities. The young are called Gianchetto, and the same name is given to the young of the sardine, both being served up like white-bait. Ratto (*Alopius vulpes*), 625 lbs.; Tunno (*Thynnus vulgaris*), a fish of the second quality, caught from a weight of 3 lbs. to 900 lbs. Verdun (*Squalus glaucus*), 500 lbs. troy. The Pegasus (*Hippocampus brevirostris*) is found, and is called Cavallo marin.

Reptiles.—The reptiles are few in genera and species: two Tortoises, six Lizards, seven Frogs, and six Serpents, the *Vipera aspis* being the only one venomous.

Birds.—According to catalogues of the Marquess Durazzo, Liguria is rich in birds. In one column is given the vulgar or patois name, in a second the scientific, and in a third notices of habits and habitats. The total number of species named is 343. The largest families, genera, and individual species, are the birds of prey, including the Owls, thirty-six. The largest genus is *Falco*, of seven species; and the next *Circus*, of five species, curiously enough including, as a native of Italy, a species I first named (*Circus pallidus*), as a native of the Deccan in India. Eleven Silvia's, eleven Salicaria's, only one Goatsucker, six Motacilla's, six Larks (seen only near Nice), including the Grivea (*Alauda arvensis*), so much esteemed and so generally introduced at tables, roasted on toast, with a thin layer of bacon-fat over it. The Merlo and Turdo, both Thrushes (*Turdus*), are also introduced at tables, when migrating in numbers. Nine Thrushes, the graceful Indian *Upupa epops*, five Crows, the Indian *Pastor roseus*, sixteen Sparrows (*Fringilla* and *Passer*), twelve Emberizæ, including the celebrated Ortolan (Nuttan, *Emberiza hortulana*), sometimes caught in multitudes; four Pigeons and Doves, three Grouse, four Partridges, including the red (*Perdix russa*) and grey (*P. sterna*); one Quail (the common), one Hemipodius and one Rock-pigeon (*Pterocles scotarius*),* two Bustards (*Otis tarda* and *tetrax*), five Plovers, five Scolopax: the woodcock abundant, but the snipes less so. Sixteen Sandpipers (*Tringa* and *Totanus*), nine Herons (*Ardea*), two Cranes, an Ibis, a Spoonbill, the Flamingo (*Phænicopterus antiquorum*), which is occasionally blown on to the coast by storms, and one beautiful, *Porphyrion antiquorum*; also the King of Quails (*Re di Quaglie*, *Crex pratensis*). The real aquatic birds number sixty-one genera and species, two Geese, one Swan (*Cygnus musicus*), seven Ducks (*Anas*), one Pelican (*Pelecanus onocrotalus*), two Cormorants, and nineteen Gulls and Sterns (*Larus* and *Sterna*). Such is an epitome of the feathered tribes of Liguria, in which I have rarely noticed genera limited to one or two species.

Mammals.—The Mammiferes of northern Italy are common to Liguria, except the bear, marmot, and the Stambecco or wild goat; the only injurious animal being the wolf, which is very rare, and seldom descends to the plains. There are two Hares (*Lepus timidus* and *variabilis*), the latter a mountain hare. In the sea there are two Seals (*Phoca*), and three Cetaceæ (*Delphinus delphis*, *Physeter macrocephalus*, and *Balenoptera musculus*).

Meteorology.—Having given a very rapid sketch or analysis of

* Seen only near Nice.

the physical features, the geology, and natural productions of Nice, there remains one branch of physics which, from its influence upon public health, I deem it right to discuss more elaborately—I mean its meteorology. Through the kindness of a French gentleman of the name of Teyssière, a resident at Nice, who has kept a very careful meteorological journal from the indications of trustworthy instruments, I am enabled to lay before an English public, I believe for the first time, records made three times daily of the barometer, thermometer, rain, and state of the sky and wind, which will enable any investigator to satisfy himself of the atmospheric phenomena for any day in the year 1853. No means were adopted, indeed do not appear to have been known, for determining the humidity of the air, either by the use of Daniell's hygrometer, or by the wet-bulb process. There is, therefore, a defect in this branch of the meteorology; but Mons. Teyssière will remedy this for the future by having apparatus constructed from drawings and memoranda with which I furnished him. Mons. Teyssière recorded a fourth observation at 10 p.m.; but, to save figures, I have not added a column for this hour in my tables of daily record; but the results of Mons. Teyssière's four daily observations are embodied in the monthly abstracts.

It is necessary to premise, that a set of standard meteorological instruments having been obtained for the *École de Commerce* at Nice, in January last, Mons. Teyssière took advantage of their arrival to compare his own with them; and he found that his barometer read off 0·009 millimètre too low; a + addition, therefore, of 0·009 must be made to every observation of the barometer to give the true reading. The hours Mons. Teyssière adopted are the best for giving the daily minimum and maximum of heat—namely, sunrise and 2 p.m.; but those hours are not suited to eliminate the daily atmospheric tides so remarkably regular in the tropics, and which are decidedly pronounced in the meteorological observations made at Genoa, where the record hours were 9, 12, 3, and 9 p.m. Mons. Teyssière's records of the barometers are in the millimètre scale,* and of the thermometer, in the centigrade.† One of the chief features in the climate of Nice, it will be seen by the records, is the freedom from cloud. In 1,485 observations made during 1853, near 63 times out of every 100 (62·7) the sky was clear; and noting by whole days, nearly 60 out of every 100 (59·4) presented an uninterrupted azure. In 21 out of 100 observations, the sky was overcast; but for whole days only 11 in 100 had contained cloud. There were only 5 hazy days in the year, 3 of them in the month of June; and though there were 14 observations of haze, never amounting to an English fog, they were limited to the three hot months of June, July, and August. There is only a single record of fog or haze in the winter and spring months, and one in June and August. It was found to be stormy once in 100 observations. Rain was falling only 11 times in 100 observations, the greatest number occurring in May—32 times on 20 separate days, a very unusual circumstance, as in the Mays from

* To convert millimètres into English inches. 762 mm. are equal to 30 inches English.

† To convert centigrade into Fahrenheit multiply centigrade by 9 and divide by 5. To product add 32°.

1849 to 1852, the days on which rain fell were respectively only 5, 7, 9, and 8, instead of 20, as in 1853. The weather was stormy 13 times, chiefly in July and August; snow fell in January and February; and hail and thunder were observed twice in every 100 observations, and in every month except November. It was windy on 108 days.

Winds.—During the year 1853, no less than 1,390 observations of the direction of the wind were recorded. The two chief characteristics were, that it either did not blow at all, or that the wind came directly from the north. On 345 occasions it was calm, or on one-fourth of the whole observations, or with a north wind 291 times, amounting to 21 per cent.; and the only relaxation of this north wind was in the months of May and June: in fact, the aggregate of the winds from the northerly points of N., N.E., and N.W., is 548, and this number added to 345 calms, leaves only 497 winds from the other four chief points of the compass. These physical facts have a very grave bearing upon diseases as indicated in the hospital returns,—to which I shall call attention. The months of the year in which the fewest calms appear are January and February—19 and 12; and the months in which are the greatest number, June and July—50 and 36. A very singular feature is the almost total absence of winds from the south, on only 31 occasions in the whole year; in some months none at all, in others only once; and it chiefly appears in June, July, and August—3, 12, 4, and 6 times respectively. Once only in the whole year did it blow stormy from the south. Winds from the south-east were almost as rare as those from the south, amounting to only 4.1 per cent. of the whole observations. The chief strong or violent winds appear to be from the east and south-west—61 moderate and 63 strong, amounting to 8.9 per cent. from the east, and 122 moderate, and 47 strong from the south-west, making 12.2 per cent. of the whole observations. It blew also 31 times strong from the north-east, and 14 times from the north. The west wind amounted to only 10.7 per cent. The prevalence of winds from northerly points is susceptible of ready explanation. The temperature of the air of the basin of the Mediterranean, off the coasts of the Maritime Alps, is comparatively high, from the generally cloudless sky and the latitude. The Alps, which border the shore for a couple of hundred miles, have their summits tipped with snow for some months in the year, and many of them perpetually: the air, therefore, of these regions is necessarily cold and dense, and descends, by its superior specific gravity, into the lighter air of the basin of this part of the Mediterranean; but how far this northerly wind extends out to sea I do not know. Its effects at Nice, however, are very significant, for in promenading the shore, even in the winter months, when the sky is clear, few persons venture out after 9 a.m. without an umbrella to protect them from the heat of the sun on one side, while a cloak or great-coat is necessary to keep them warm on the other against the cold of the northerly wind from the neighbouring snowy summits. It is like being placed between an oven and an ice-house, or in the draught of wind between a fire and a door in a room. Nor is this an exaggeration, nor of occasional occurrence; and in addition, after a fall of snow in the neighbourhood,

while the eye is pained by the glare of the sun, at the same moment it is dazzled by the brightness of the snow on the summits and slopes of the hills.

Temperature.—Although in the accompanying abstract the mean temperature is given for four periods of the day, yet as two of them, sunrise and 2 p.m. are periods of maxima and minima, I shall limit my notices to them. The coldest month in the year at sunrise* is February, $38^{\circ}93$ Fahr.; then December, $41^{\circ}13$; and then March, $42^{\circ}24$ Fahr. In January the thermometer did not fall once to the freezing point, and only once fell to within $3^{\circ}73$ of freezing, the mean temperature at sunrise being $44^{\circ}87$, and of the month $48^{\circ}68$ Fahr. The mean temperature of February was $42^{\circ}55$, of December $44^{\circ}85$, and of March $46^{\circ}74$. In February the temperature only fell twice to the freezing point (19th and 20th), although several times verging upon it. On the 19th and 20th snow, a foot deep, fell; and on the 7th, 8th, and 13th snow fell on the neighbouring hills, while rain fell in Nice. In March the thermometer did not once fall to the freezing point, nor was there a fall of snow. On the 29th, 30th, and 31st December, 1853, the thermometer fell to $28^{\circ}60$, $31^{\circ}64$, and $29^{\circ}66$. In January, 1854, the thermometer fell just to the freezing point, on the 2nd and 3rd, at sunrise, being $4^{\circ}86$ lower than in January, 1853. There was not any fall of snow in December, 1853, or January, 1854. Having given the minimum of the thermometer, I proceed to the maximum† indication, which was $90^{\circ}86$ on the 3rd September, at 2 p.m., with a cloudy sky and south-west wind, in the shade, and with a north aspect. It had suddenly jumped up from $79^{\circ}34$, at 2 p.m., without wind, on the preceding day, to this formidable height. However, on the 5th August, at 2 p.m., with a moderate wind from the south, the thermometer stood at $84^{\circ}2$, and in the preceding eight days, at 2 p.m., it only once (31st July) stood as low as $81^{\circ}86$. In June the thermometer rose twice to $77^{\circ}90$ and $77^{\circ}0$, on the 10th and 13th. The mean temperature at 2 p.m.‡ of June was $72^{\circ}52$, of July $78^{\circ}89$, of August $79^{\circ}56$, and of September $73^{\circ}65$. The mean temperature of these four hottest months, by four daily observations, was, June $66^{\circ}83$, July $72^{\circ}61$, August $75^{\circ}56$, and September $66^{\circ}99$. The mean range of temperature in the cold months, from sunrise to 2 p.m., was, in January $8^{\circ}64$, in February $9^{\circ}29$, in March $10^{\circ}64$, and in December $8^{\circ}36$. In the hot months the mean range was in June $10^{\circ}19$, in July $12^{\circ}52$, in August $12^{\circ}70$, and in September $11^{\circ}20$. The greatest range in the day in the coldest months was, on the 15th February, $15^{\circ}48$, and 7th March $16^{\circ}38$. In April there were several days when the range was a little more, particularly on the 25th, when it amounted to $20^{\circ}7$. In the hot months, with the exceptional case of the great heat on the 3rd September, when the range on that day was $21^{\circ}96$, the greatest range in the

* At Genoa, at 9 A.M., the mean of 10 years, 1833 to 1842, give February $46^{\circ}88$, December $48^{\circ}59$, March $50^{\circ}86$, and January $44^{\circ}96$.

† At Genoa, in 10 years, 1833 to 1842, the maximum was in July and August, $90^{\circ}50$, and the minimum in January, $26^{\circ}42$: range $64^{\circ}08$.

‡ At Genoa, at 3 P.M., means of 10 years: June $75^{\circ}41$, July $79^{\circ}07$, August $79^{\circ}83$, September $73^{\circ}37$.

24 hours in the months of June, July, August, and September, was $16^{\circ}2$ on the 8th September. The maximum mean range for the year was, from the mean sunrise of February, $38^{\circ}93$, to the mean of 2 p.m. of August, $79^{\circ}56$, namely, $40^{\circ}63$. The greatest absolute range of the thermometer in the year was from $28^{\circ}60$, on the 20th December, to $90^{\circ}86$, on the 3rd September, a difference of $62^{\circ}25$; but as this was an exceptional case, the next maximum may be taken, $84^{\circ}2$ on the 5th September, which gives an annual range of $55^{\circ}60$ Fahr.

Barometer.—The range of pressure of the atmosphere at Nice, like the range of temperature, partakes of a tropical character in the comparative steadiness of movement and absence of violent aberrations. The highest indication of a compared barometer in 1853-4 was 0.772 m. (30.393 in.) during the three periods of observation on the 26th January, 1854, and nearly this pressure continued for three days. On the 1st January, 1853, at sunrise, the pressure was 0.767 m. (30.197 in.); and these were the highest indications during the year. The smallest pressure occurred at sunset 9th February, and at 2 p.m. and sunset on the 19th February, after two days' fall of snow on the neighbouring hills, which was converted into rain in Nice on the 9th, and was 0.737 m. (29.015 in.); the extreme range of pressure, therefore, in the year was only 0.035 m.* (1.378 in.) The barometer stood for a whole day, on the 7th February, at 0.741 (29.173 in.), on the 15th December, for a whole day, at 0.742 m. (29.211 in.), and on the 5th January, 1854, at sunrise, at 0.744 m. (29.291 in.). The maximum monthly range was, in January, 1854, 0.028 m. (1.102 in.); in January, 1853, only 0.023 m. (0.905 in.); in February, 1853, only 0.021 m. (0.823 in.) The daily range of the barometer was very limited, rarely exceeding 0.004 m. (0.118 in.), on December only 0.003 m. (0.118 in.); but on the 20th May, in a thunder-storm, it amounted to 0.010 m. (0.393 in.) In the summer months the barometer scarcely moves for days together, as indicated by millimètres; and the daily range in June did not exceed 0.003 m. (0.118 in.), in July 0.005 m. (0.197 in.), in August 0.003 m. (0.118 in.), and in September 0.003 m. (0.118 in.) The highest monthly mean pressure was, in November, 0.7581 m. (29.846 in.); and somewhat unexpectedly, and contrary to tropical movements, the next highest was in July, 0.7580 m. (29.841 in.); but January followed, 0.7579 m. (29.837 in.); and February proved exceptional, being the coldest month, with the lowest barometer, 0.7473 m. (29.421 in.) Notwithstanding these observations, the atmospheric pressure appears to have certain relations to the position of the sun in the ecliptic, although not so marked as in India. But these relations are quite apparent in the ten years' observations at Genoa, where it is seen that the winter months have the highest pressure— 0.75808 m. (29.845 in.), and the summer only being 0.75675 m. (29.793 in.), the difference, with a minus sign, = 0.053 in. The mean pressure in autumn was even less— 756.21 m. (29.759 in.) equal to -0.086 in. The mean pressure for 1853, at Nice, was 0.7552 m. (29.601 in.), and at Genoa, for the

* The extreme range in Genoa in 10 years, 1833 to 1842, was in Feb. 1834, from 0.77566 m. to 0.72728 m. in Feb. 1838, being a difference of 0.04838 m. (1.904 in.)

ten years, 756·62 m. (29·788 in.) There are further indications of a tropical character in the daily tides of the atmosphere at Nice, and indisputably so at Genoa. This daily rise and fall of the barometer was first suspected in 1682, but elaborately eliminated in 1799 by Humboldt in tropical South America. Meteorological observations in India confirmed it: my own observations for years in the Deccan proved that it never failed for a single day, which proofs I extended in a recent comprehensive discussion of the meteorology of India; and in Europe, Sir William Snow Harris has eliminated the atmospheric tides at Plymouth; and Mons. Quetelet, in his meteorology of Belgium for 1853, gives curves of daily atmospheric tides of a marked and regular character. Meteorological observations at Nice and Genoa show that, in the neighbourhood of the Alps, the phenomena are traceable. The observations at Nice have the disadvantage of being made, not at the hours of periodic maxima and minima, which are 9—10 a.m., 3—4 p.m., 9—10 p.m., and 4—5 a.m., but they are made sufficiently near to those hours of maxima and minima to indicate that the daily atmospheric tide exists, when monthly means are struck. For instance, in January, 1853, at sunrise, the mean pressure was 0·753 m. (29·647 in.); at 2 p.m. it fell to 0·752 m. (29·606 in.) difference 0·041; and at sunset it had risen to 0·7526 m. (29·629 in.) a rise of 0·023. Similarly in February, at sunrise, the pressure was 0·7422 m. (29·220 in.); at 2 p.m. 0·7416 m. (29·197 in.) a fall of 0·023 in.; and at sunset 0·7420 m. (29·212 in.) a rise of 0·015 in. In July these feature are not quite so well borne out. At sunrise and 2 p.m. the mean pressure was identical—0·753 m. (29·647 in.), and at sunset it had only slightly diminished—9·7526 m. (29·629 in.) difference, 0·018 in.* In September there is the singular fact of the *mean* monthly pressure, at the three periods of the day, being absolutely the same, 0·7555 m. (29·744 in.), notwithstanding diurnal changes.

But at Genoa, the hours of observation being identical with the hours of maximum and minimum pressure in the tropics, the diurnal atmospheric tides are marked in every month, without an exception—

Mean Descent of Barometer from 9 A.M. to 3 P.M.

January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
—	—	—	—	—	—	—	—	—	—	—	—
000·63	000·27	000·92	000·74	000·55	000·51	000·44	000·65	000·62	000·73	000·67	000·75

In the same manner, without the exception of a month, the rising

* Had the barometer in use at Nice been cut to a fourth and fifth place of decimals, as would appear to have been the case with the barometers at Genoa, the daily atmospheric tides might have been as markedly developed at Nice as at Genoa. As I before remarked, also, the hours of observation at Nice were not so favourable to show the tides as those adopted at Genoa.

tide, from 3 p.m. to 9 p.m., is shown to exist, although in July it only amounted to + 000·07.

January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
+	+	+	+	+	+	+	+	+	+	+	+
000·51	000·97	000·71	000·63	000·42	000·15	000·07	000·27	000·48	000·47	000·56	000·54

In the monthly mean pressure of all the observations, as at Nice, there are indications of the pressure having a relation to the place of the sun in the ecliptic. When the sun is at the southern tropic, the pressure is greatest, and diminishes until the sun comes to the equator. According to the observations in India, the pressure at Genoa should diminish until the sun touches the northern tropic; and on the return south, the mean pressure should increase again. This is not exactly the case, as the pressure increases from the end of March to the end of July, but does not attain the winter maxima. After July the pressure diminishes, as in India, until October, when there is a small rise, and then a sudden fall in November, followed by a considerable rise in December. It is interesting to see these indications, although imperfect, of tropical phenomena.

Humidity.—As a Daniell's hygrometer was unknown at Nice, and as I was the first to furnish a drawing of a psychrometer, or wet-bulb apparatus, just before leaving Nice, from the absence of observations no conclusive facts can be given with respect to the amount of moisture in the air. I cannot, however, abstain from expressing my belief that the asserted dryness of the air is attributable to the feelings induced by the prevailing winds from the Alps. Nice is situated on both banks of the Paglion, at its embouchure, on the shore, receiving the water-shed of the neighbouring hills, which percolates under the town: a stratum of clay, a few feet under the surface, prevents the water being absorbed below, and water, as is shown by the wells, is everywhere within three or four feet of the surface. Moreover, if the air were dry, the northerly wind and hot sun would rapidly absorb surface-water. Nevertheless, after rain, the shady sides of the streets remain damp for days, and the lanes in the valley continue muddy; and I have repeatedly seen, even in the open square of Vittoria, constantly exposed to the sun, patches of damp earth remaining for days after rain. At sunset, also, a damp feeling occurs; and it is deemed unwholesome to be out of doors for two or three hours afterwards. For the future, means will, I believe, be adopted to clear up these doubts.

Electricity.—Observations were not made to determine the electrical state of the air.

Rain.—There was not any record kept of the fall of rain, as measured by pluviometer, during 1853. Mr. Wilkins, in his book, says the maximum of an annual fall was 41 in.; the minimum 15 in.; and the mean annual fall of rain at Nice 24 in.: about the same as in London.

Meteorological Observations during January, 1854.

North of Maison A Tiranly.—Route de France.										Minimum Ecole de Com- merce.	Remarks.		
Date.	Sunrise.			2 P.M.			Sunset.						
	Bar.	Ther.	Wind.	Sky.	Bar.	Ther.	Wind.	Sky.	Bar.	Ther.	Wind.	Sky.	
Sunday	1	0.748	1.3	N.	Clear	0.748	5.6	W. strong.	Clear	0.745	5.6	W. strong	Cumuli
	2	0.747	+0.9	N.W.	Clear	0.747	+6.5	N.W. strong.	Clear	0.746	+3.5	Calm	Clear
	3	0.748	0.0	N.	Cumuli	0.747	+8.8	N.	Hail	0.747	8.7	N.	Overcast
	4	0.742	+8.0	E. strong	Cloudy	0.740	10.2	E. strong	Rain	0.738	7.7	E. strong	Rain
	5	0.739	5.2	N.	Cloudy	0.741	10.7	S.	Clear	0.742	8.8	S.W. strong	Clear
Sunday	6	0.744	7.0	N.	Cloudy	0.744	10.6	S.	Cloudy	0.745	8.0	S.	Clear
	7	0.749	5.8	N.	Clear	0.751	11.0	S.W.	Clear	0.752	8.2	S.W.	Clear
	8	0.749	7.2	N.W.	Rain	0.748	9.1	S.W.	Rain	0.748	9.8	N.W.	Rain
	9	0.746	7.5	N.	Rain	0.744	11.0	E.	Overcast	0.745	9.9	E.	Cloudy
	10	0.743	4.0	N.W.	Clear	0.743	9.0	W.	Clear	0.744	6.2	N.W.	Cloudy
Sunday	11	0.743	4.0	N.W.	Clear	0.743	9.0	W.	Clear	0.744	6.2	N.W.	Cumuli
	12	0.748	7.6	N.W.	Cloudy	0.748	12.2	N.W.	Clear	0.747	10.0	Calm	Clear
	13	0.748	6.2	N.	Clear	0.748	11.8	S.	Clear	0.747	9.0	N.	Clear
	14	0.750	5.2	N.W.	Clear	0.751	12.0	S.W.	Clear	0.752	10.2	N.W.	Cumuli
	15	0.755	6.0	N.	Cumuli	0.755	11.8	E. strong	Cloudy	0.756	11.3	E. strong	Cloudy
Sunday	16	0.756	9.8	N.W.	Cloudy	0.757	12.6	E.	Cloudy	0.757	11.5	Calm	Cloudy
	17	0.760	8.9	N.W.	Clear	0.760	14.8	S.	Clear	0.760	11.8	Calm	Clear
	18	0.760	6.5	N.E.	Clear	0.761	11.3	S.	Clear	0.762	10.7	Calm	Clear
	19	0.755	9.5	N.E. strong	Cloudy	0.756	18.0	N.E. strong	Cloudy	0.755	16.8	N.E. strong	Cloudy
	20	0.760	11.5	N.W.	Cumuli	0.759	15.7	E. strong	Clear	0.760	13.8	Calm	Cumuli
Sunday	21	0.763	7.0	N.E.	Clear	0.763	16.0	S.W.	Clear	0.762	11.0	Calm	Clear
	22	0.761	6.5	N.	Clear	0.760	15.7	S.W.	Clear	0.759	11.5	Calm	Clear
	23	0.757	6.8	N.W.	Clear	0.757	14.6	S.E.	Clear	0.758	11.8	E. strong	Clear
	24	0.759	4.2	N.	Clear	0.759	11.0	E.	Cloudy	0.760	9.0	Calm	Clear
	25	0.759	7.0	Calm	Overcast	0.761	12.0	S.W.	Cloudy	0.763	7.0	N.W.	Overcast
Sunday	26	0.767	2.8	N.W.	Clear	0.767	13.0	S.W.	Cloudy	0.767	7.6	N.W.	Clear
	27	0.766	7.0	N.W.	Clear	0.766	14.3	E. strong	Clear	0.766	11.4	E. strong	Clear
	28	0.767	5.7	N.E.	Cloudy	0.766	11.8	S.W.	Clear	0.765	9.0	W.	Clear
	29	0.762	4.3	N.	Cloudy	0.761	11.8	Calm	Cloudy	0.759	9.8	Calm	Cumuli
	30	0.757	4.4	N.W.	Clear	0.757	11.9	S.E.	Clear	0.757	9.8	Calm	Clear
31	0.757	7.0	N.	Clear	0.757	15.7	S.	Cumuli	0.757	12.9	Calm	Clear	
						23365			23365				
						0.75371			3.753.74				

Great rise of
thermometer.

Genoa Royal University, lat. 41°25'. Long. east of Paris, 55°24', from 1833 to 1819, 10 years. Height above the sea 47 met. 18mm. By PROFESSOR GARIBALDI.	State of the Sky as observed.				State of the Sky by Day.				Mean Temperature.				Bar. Mean.				Barometer.							
	Number of Ob- servations.	Clear.	Overcast.	Hazy.	Rain.	Fog.	Stormy.	Thunder and Hail or Snow.	Clear.	Overcast.	Rain.	Hazy.	Windy.	9. A.M.	12. Noon.	3. P.M.	9. P.M.	9. A.M.	12. Noon.	3. P.M.	9. P.M.	Mean Mthly.	Max.	Min.
January ..	130	79	29	..	20	..	..	2	19	4	8	11	7-20	8-29	8-67	7-08	758-94	758-59	758-11	758-62	758-52	..	..
February ..	116	68	25	..	18	..	..	5	18	2	8	11	8-27	9-62	10-20	8-29	57-68	57-41	56-81	57-38	57-24	769-61	..
March ..	128	70	36	..	21	..	..	1	14	4	13	12	10-48	11-82	12-69	10-25	56-63	56-39	55-71	56-42	56-17	..	..
April ..	122	93	24	..	3	..	..	2	25	3	2	11	13-11	14-40	15-15	12-67	54-38	54-25	53-64	54-27	54-01	..	..
May ..	133	55	41	..	32	..	..	5	9	2	20*	14	17-91	18-03	19-77	17-21	56-40	56-38	55-85	56-27	56-13	..	..
June ..	129	75	27	11	11	1	..	4	17	2	8	9	22-33	23-22	24-12	21-33	57-39	57-33	56-88	57-03	57-14	..	..
July ..	132	119	5	2	2	..	3	1	26	3	2	4	24-27	25-27	26-15	23-39	56-78	56-67	56-32	56-39	56-55	..	..
August ..	128	98	15	1	4	..	8	1	22	4	1	8	24-22	25-31	26-57	23-31	56-88	56-74	56-23	56-50	56-55	..	..
September ..	125	85	24	..	12	..	1	3	20	3	6	1	20-73	21-85	22-87	19-32	56-72	56-63	56-10	56-58	56-41	..	..
October ..	130	68	30	..	27	..	..	4	14	4	13	9	16-73	18-13	18-92	16-39	57-12	57-03	56-39	56-86	56-76	..	..
November ..	114	57	32	..	25	..	..	..	14	4	12	8	11-80	12-89	13-24	11-09	55-80	55-65	55-13	55-69	55-46	..	741-96
December..	98	63	21	..	11	1	1	1	19	5	7	4	9-22	10-34	10-68	9-22	58-86	58-60	58-11	58-65	58-48	..	..
Total...	1,485	930	309	14	166	3	13	26	217	40	103	5	108											
Per Cent. { age.....}	..	62.7	21.0	0.9	11.2	0.2	1.0	2.0	59.4	10.9	28.2	1.4	30.0											

Winter ..	8 23	9-45	9-85	8-23	758-49	758-20	757-67	58-22	58-08	..
Spring ...	13-83	15-05	15-87	13-38	55-80	55-67	55-07	55-65	55-44	..
Summer..	23-61	24-60	25-55	22-68	57-02	56-91	56-48	56-64	56-75	..
Autumn..	16-42	17-62	18-34	16-00	56-55	56-43	55-87	56-38	56-21	..
Mean..	15-52	16-68	17-40	15-07	756-97	756-81	756-27	756-72	756-62	..
Year...	61.10 Fahr.				20-788 English					

Ther. Max. 32.5 in July and August.
Min. — 3.1 in January.

Feb. 1834, Max. 775.66 } Diff. 48.38
" 1838, Min. 727.28 }

The atmospheric tide quite marked the mean descent being from 9 A.M. to 3 P.M. 0mm. 692, and mean ascent from 3 P.M. to 9 P.M. 0mm. 449. Genoa, remarkable for rain, averaging 13 days a month and high temperature.

	N.		N.E.		E.		S.E.		S.		S.W.		W.		N.W.		Numbers of Observations.	Thermometer Means, Centigrade.					Barometer.
	Moderate.	Strong.	Moderate.	Strong.	Moderate.	Strong.	Moderate.	Strong.	Moderate.	Strong.	Moderate.	Strong.	Moderate.	Strong.	Moderate.	Strong.		Sunrise.	2 P.M.	Sunset.	10 P.M.	Mean of Month.	Means of Month.
January ...	39	1	1	5	6	5	7	..	1	..	4	4	2	2	23	5	19	7.15	11.05	9.73	8.23	9.27	0.7579
February ..	25	..	4	5	4	3	4	..	1	..	6	6	8	10	20	2	12	3.85	9.01	5.83	4.71	5.86	0.7473
March	22	1	12	4	4	10	7	..	..	..	16	2	4	..	14	..	28	5.69	11.00	9.15	6.46	8.22	0.7535
April	20	2	7	1	8	6	11	..	1	..	17	8	1	3	12	1	22	9.80	16.71	14.03	11.43	13.01	0.7543
May	9	..	14	6	2	17	6	1	..	..	14	3	9	..	8	..	28	14.10	19.19	16.81	11.88	16.23	4.7545
June	7	1	6	1	10	..	6	..	3	..	7	9	3	4	8	..	50	16.85	22.28	19.81	18.45	19.35	0.7550
July	23	2	9	..	2	3	4	..	12	..	13	2	..	..	16	..	36	19.10	26.05	23.57	21.51	22.56	0.7580
August	25	..	11	..	5	4	5	..	4	..	14	6	1	..	15	..	30	19.37	26.42	24.23	22.46	23.12	0.7566
September..	20	1	19	2	1	5	4	..	6	..	9	3	4	..	12	..	32	16.29	22.85	20.50	18.12	19.41	0.7560
October ...	24	1	12	3	8	1	..	..	..	1	10	4	7	..	15	..	32	13.16	17.42	16.19	14.29	15.26	0.7569
November..	25	4	9	2	8	4	..	..	2	..	4	..	5	1	12	..	34	10.02	14.59	12.59	10.90	11.77	0.7581
December..	38	1	4	2	3	5	2	..	..	..	8	..	2	..	4	1	22	5.07	9.72	7.78	6.02	7.14	0.7514
Total	277	11	108	31	61	63	56	1	30	1	122	47	46	20	159	9	315	..	..	..	..	..	..
Per Centage	20.9		10.0		8.9		4.1		2.2		12.2		4.7		12.1		21.9	..	..	..	..	..	..

As a complement to the above details, it may be mentioned that a great snow-storm took place in England on the 3rd and 4th January, 1854, the thermometer in Hyde Park during the winter having fallen to 17° below freezing. The barometer in the house of the Marine Society, in Hyde Park, on the 5th January, when the thaw commenced, stood at $28^{\circ}80$, and simultaneously at Nice at 0.741 m. = $29^{\circ}173$; so that the diminution of pressure extended over several degrees of latitude and longitude. On the 4th January, at Nice, at night, there was a tremendous storm of lightning, thunder, and rain, the thermometer was not below $3^{\circ}8$ Fahr. below the freezing point from the 2nd January; but the sensation of cold was so great, that, with a wood-fire in the drawing-room, a great coat was desirable, and a lady wrapped herself up in a thick woollen shawl.

The preceding analysis of the meteorology of Nice and Genoa, and by inference that of the Maritime Alps, presents some features common to a tropical climate, *id est*, comparatively limited range of atmospheric pressure, small ranges of the thermometer, whether daily, monthly, or annual, no excess of heat in the summer, no great diminution of temperature in the winter, an unclouded sky for weeks together, violent winds and tempests rare, serenity of the atmosphere being a characteristic, and added to all, perennial verdure. There would thus seem to be a combination of physical circumstances highly conducive in the people to freedom from formidable diseases, and more especially those affecting the respiratory organs. Such a view, reasonable and natural as it appears, would involve a grave and dangerous error if the following medical returns be trustworthy guides; and of this there should not be question, as they are official documents, called for by the government of the country. It were to be wished that we had these returns of a more recent date; but they are the latest printed by the government. The return of the deaths in the hospital of St. Rocco at Nice, for 1853, was supplied to me through the good offices of the civil governor, Signor Marmara.

I first notice a nosological return (Prospetto nosographico) of the deaths in the hospital of St. Rocco at Nice from 1828 to 1837, amounting to 1,016. The greatest number of deaths is attributed to inflammation of the respiratory organs; namely, 25.1 per cent. of the total deaths—86 succumbed to bronchitis, males 44, and 42 females; pleurisy, 138—males 82, and females 56; besides these, the deaths from phthisis were 29—males 19, and females 10; total 253. The nearest approach to these numbers is 12.2 per cent. from gastric inflammation, 124 deaths—males 57, and females 67. And in one instance only, under all other heads of disease, does the number amount to 30 deaths: namely, rheumatic fever, males 12, females 18, giving only 2.9 per cent. of the total deaths. In the hospital of St. Croce, at Nice, for the same period, there is the same characteristic of diseases of the respiratory organs being more fatal than any other diseases. The total number of deaths was 235, and of these, 63, or 28.1 per cent., including 16 of phthisis, were from diseases of the lungs: the greatest number, under any other head, being gastric inflammation, 13, or 5.1 per cent. only of the total deaths. Arranged by months, the deaths diminish from March and increase again in August. In the return from the hospital

of St. Rocco for 1853, the mortality from chest affections far exceed the above per-centages. The whole number of deaths from all causes was 38, of which number no less than 31, or 81·6 per cent., died from diseases of the respiratory organs; consumption 9, bronchitis 14, and pneumonia 8; and yet there had been 110 cases of fever with only 2 deaths, and 68 of rheumatism with 5 deaths. The total number of chest cases treated was 106 out of 284 patients admitted, or 39·4 per cent.

Return of Patients received into the Hospital of St. Rocco at Nice, in 1853, together with the Deaths and Cures.

Months.	Fever.	Rheumatism.	Consumption.	Bronchitis.	Pneumonia.
January	6	10	2	9	3
February	3	1	....	21	3
March	5	7	1	8	3
April	9	6	1	4	2
May	8	2	2	1	2
June	5	4	....	2	3
July	4	4	3	1	....
August	19	3	2	3	1
September	14	3	....	4	2
October	10	6	1	2	1
November	12	4	2	4	2
December	19	8	2	5	4
Total	110	68	16	64	26
Deaths	2	5	9	14	8
Cures.....	108	63	7	90	18

Note.—Fever includes intermittent 49, ephemeral 10, gastric fever 40, bilious fever 2, &c. Under rheumatism 20, rheumatic fever 19, &c. Amongst the consumptive cases, 6 only were tuberculous. The 7 cases of consumption, under the head “cures,” mean that an amelioration had taken place. Under bronchitis 42 were bronchitis, and 22 influenza. Under pneumonia are included 10 pulmonary catarrh, 8 pleurisy, and 8 pneumonia.

The above return of 284 patients does not include the surgical cases, amounting to 819, of which 110 died, or 13·4 per cent., and 709 were cured.

The official return of the patients received in the two civil hospitals of Nice: Santa Croce and San Rocco, for 10 years, from 1828 to 1837, comprised 7,924 patients with acute diseases, of whom 1,251 died as stated in the Nosological Return, or 15·7 per cent., and 6,598 were discharged, or 83·3 per cent.

The return from the military hospitals at Nice, from 1834 to 1843, divide the cases into inflammation, inflammatory affections of the chest, bronchitis, and pleurisy.

Patients Treated in the Hospitals at Nice, from 1823 to 1837 Inclusive.

Population of the Province of Nice, 1838:—Males, 56,148; Females, 56,295.

Population of Town.	Hospital.	Diseases.	Sexes.	Remaining, 1st January, 1828.	Received in 10 Years.	Total.	Discharged.	Dead.	Remaining, 31st December, 1837.	Discharged to 100 Treated.	Number of Deaths to 100 Treated.
33,811	Santa Cruce	Acute...	{ Males	9	767	776	628	139	9	81·88	18·12
			{ Females	11	411	422	316	93	10	76·70	23·30
				20	1,178	1,198	944	235	19	80·07	19·93
	S. Rocco	Acute...	{ Males	19	4,368	4,387	3,822	535	30	87·72	12·28
			{ Females	25	2,314	2,339	1,832	481	26	79·20	20·80
				44	6,682	6,726	5,654	1,016	56	84·77	15·23

Cretins.—Having observed several swelled throats, and some real goitres, at Nice, I looked over the government returns, and found that a good deal of cretinism existed in Piedmont and Savoy. In December, 1845, in a population of 2,558,349 souls, there were 18,462 people with simple goitres. Cretins, without goitre, 2,089, with goitre, 3,909, and not stated 962; total 6,960. Of these, 2,185 had mere animal instincts, 3,531 with very small intellectual faculties, 196 almost without any, and 1,048 not specified. Of this number of poor creatures, 2,483 were born from healthy (*sani*) fathers, and 2,285 from healthy mothers; 961 from goitre fathers, 1,267 from goitre mothers; 49 from cretin fathers, 41 from cretin mothers; 106 from goitred cretins, 66 from goitred cretin mothers; and 438 fathers and 405 mothers not specified. The per-centage of cretins to the whole population was 0·27, running as high, however, as 2·78 in Aosta (78,110 inhabitants), and 2·26 in Moriana, in Savoy (62,344 inhabitants). Although I saw some goitres in Nice, and several cases of swelled throats, I did not see a cretin; and the return gives for the province only 11 cretins, or 0·009 per cent. of the population, 112,428.

It is to be regretted that the official printed statistics of the Sardinian states do not come down in any branch of the subject to a later date than 1848, and the generality of the returns range between 1823 and 1837; and as considerable ameliorations have taken place since the earlier date in the political and social condition of the people, former facts might possibly now appear with a new face; but such returns as are printed, from the evident labour bestowed upon their compilation, appear to me to be worthy of confidence.

Cavalry Hospital at Nice, from 1834 to 1843, inclusive.

	Medical Cases.					
	Remaining 1st Jan., 1834.	Received in 10 Years.	Total Treated.	Dis- charged.	Dead.	Remaining 30th Dec., 1843.
Regimental Hospital of Cavalry	12	4,837	4,849	4,754	89	6

	Surgical Cases.					
	Remaining 1st Jan., 1834.	Received in 10 Years.	Total Treated.	Dis- charged.	Dead.	Remaining 30th Dec., 1843.
Regimental Hospital of Cavalry	5	2,050	2,055	2,042	9	4

	Venereal.					
	Remaining 1st Jan., 1834.	Received in 10 Years.	Total Treated.	Dis- charged.	Dead.	Remaining 30th Dec., 1843.
Regimental Hospital of Cavalry	3	490	493	490	1	2

	Cutaneous Scabbiosi.					
	Remaining 30th Jan., 1834.	Received in 10 Years.	Total Treated.	Dis- charged.	Dead.	Remaining 30th Dec., 1843.
Regimental Hospital of Cavalry	7	869	876	875	....	1

	Total.					
	Remaining 30th Jan., 1834.	Received in 10 Years.	Total Treated.	Dis- charged.	Dead.	Remaining 30th Dec., 1843.
Regimental Hospital of Cavalry	27	8,246	8,273	8,161	99	13

Military Hospital Returns for the Division of Nice, from 1834 to 1843 Inclusive.

Year.	Medical.						Surgical.						Venereal.						Skin Diseases.						Total.						Troops in Garrison.	
	Remaining.	Received.	Total Treated.	Discharged.	Dead.	Remaining.	Received.	Total Treated.	Discharged.	Dead.	Remaining.	Received.	Total Treated.	Discharged.	Dead.	Remaining.	Received.	Total Treated.	Discharged.	Dead.	Remaining.	Received.	Total Treated.	Discharged.	Dead.	Remaining.						
1834	35	1262	1297	1361	22	14	20	421	441	427	3	11	8	88	96	93	..	3	1	9	10	10	..	64	1780	1844	1791	25	28	Brigade of Piemonte—a battery of artillery, veterans and invalids		
1835	14	937	971	921	31	19	11	339	350	331	..	19	3	90	93	88	..	5	..	19	19	18	..	1	28	1405	1433	1358	31		44	
1836	19	775	794	770	7	17	19	340	369	345	2	12	5	92	97	95	..	2	1	35	36	36	..	..	41	1242	1286	1246	9	31	Brigade of Cosale, ditto, ditto
1837	17	951	968	928	24	16	12	529	541	519	..	22	2	26	28	23	..	5	..	31	31	29	..	2	31	1537	1568	1499	24	45		
1838	16	922	938	910	20	8	22	554	576	561	4	11	5	35	40	38	..	2	2	26	28	27	..	1	45	1543	1590	1544	24	22	Brigade of Savoy, ditto, ditto	
1839	8	778	786	741	32	13	11	289	300	281	2	17	2	15	17	17	..	1	..	9	10	10	..	..	22	1087	1109	1045	34	30	
1840	13	691	704	663	15	26	17	306	323	308	3	12	..	39	39	37	..	2	..	5	5	4	..	1	30	1041	1071	1012	18	41	Brigade of Savona, ditto, ditto	
1841	26	825	831	815	19	17	12	566	578	552	..	26	2	39	41	35	..	6	1	2	3	3	..	..	41	1432	1473	1405	19	49	
1842	17	782	799	769	13	17	26	477	503	489	1	13	6	30	36	36	49	1289	1338	1294	14	30	Brigade of the Queen, ditto, ditto
1843	17	960	977	947	21	9	13	333	346	341	1	4	..	50	50	48	..	2	..	23	23	23	..	..	30	1366	1396	1359	22	15	
Total	35	8903	8938	8725	204	9	20	4154	4174	4154	16	4	8	504	512	510	..	2	1	159	160	160	..	..	64	13720	13784	13549	220	15	

In the infantry hospital the cases were arranged as medical, surgical, venereal, and skin diseases: in the two latter there were not any deaths; in the medical 204, and surgical 15. The total number of patients treated were, medical 8,938, with 204 deaths; surgical 4,174, with 16 deaths; venereal 512, no deaths. Skin diseases, 160, and no deaths. The per-centage of deaths upon the medical cases was 2·28; upon the surgical cases not quite four tenths per cent. The very small proportion (3·7 per cent.) of venereal cases to the total number treated is, I think, an unusual feature in a military hospital.

In the cavalry hospital at Nice, from 1834 to 1843, 4,849 medical cases were received, with 89 deaths, or 1·8 per cent.; 2,055 surgical cases, with 9 deaths, or 0·45 per cent.; 493 venereal cases, and 1 death; and 876 skin cases, and no deaths. The venereal cases were about 6 per cent. of the whole cases, considerably exceeding the proportion in the infantry.

Foundlings.—The total number of foundlings received in ten years into the foundling hospital at Nice was 340 boys and 289 girls, namely, 189 boys legitimate, and 147 girls; and 153 boys illegitimate, and 142 girls; total, 629. And the deaths in ten years were 137, namely, 48 boys legitimate, and 38 girls; and 26 boys illegitimate, and 25 girls. The chief mortality is between the ages of one and two years, increasing from two months up to that age; and after the age of four the deaths are rare. In the original return the deaths are arranged by months; and the greatest mortality occurred in June and August—11 males, 9 females, = 20; and 10 males, 12 females, = 22. The smallest number of deaths occurred in December—1 male, 4 females, = 5. The greatest mortality with respect to age was between the seventh month and two years old. One hundred and fifty-four legitimate children were restored to their parents; but only 18 illegitimate. In the province of Nice, in ten years, the illegitimate boys were only 1·05 per cent. of the population, and girls 1·09 per cent.; both sexes 2·14 per cent., a ratio it were well some other European towns could boast of.

Mortality of Foundlings at Nice in the Ten Years 1828 to 1837.

	Total Deaths in 10 Years.				Total Deaths in 10 Years.		
	Males.	Fem.	Total.		Males.	Fem.	Total.
Abortions .....	....	....	....	5 years	1	1	2
Dead born .....	....	....	....	6 "	1	....	1
8 days	2	2	4	7 "	2	2	4
9 to 15 days	2	1	3	8 " .....	....	....	....
16 days to 1 month	1	2	3	9 "	1	....	1
2 to 3 months	11	6	17	10 "	1	....	1
4 to 6 "	6	9	15	11 " .....	....	....	....
7 to 12 "	9	13	22	12 " .....	....	....	....
1 to 2 years	28	17	45	Beyond 12 yrs. ....	....	....	....
3 years	4	7	11				
4 "	5	3	8	Totals	74	63	137

That the grave mortality prevalent at Nice in diseases of the

respiratory organs is characteristic of other localities in Piedmont is unmistakably shown by the hospital returns from Genoa and Turin. At Genoa, in the hospital of Pommatone, in ten years, from 1828 to 1837, 77,590 patients (27,989 males, and 49,601 females) were treated, and 11,683 died. There were 1,756 deaths from inflammation of the chest, including bronchitis and pleurisy (764 males, and 992 females); consumption 521 (233 males, and 288 females); pulmonary catarrh 961 (393 males, and 568 females); and asthma 389 (163 males, and 226 females), making a total of deaths from diseases of the respiratory organs of 3,627 in 11,683, or 31·04 per cent. of the total deaths. The next greatest mortality was 1,297 from inflammation of the bowels (528 males, 769 females), or 11·1 per cent. only of the total deaths; rheumatic fever 1,003 (391 males, 612 females), or 8·6 per cent.; and the next highest mortality was from inflammation of the brain 937 (399 males, 538 females), or 8·02 per cent. At Turin, in the hospital of St. John the Baptist, on the hot plains of Piedmont, but within sight of the snowy ranges of Monte Rosa and the Great St. Bernard, the mortality is even greater from diseases of the chest than at Genoa. The total patients treated was 49,362 (males 28,484, females 20,874); and the deaths in ten years were 4,865. Those from acute and chronic bronchitis and pleurisy were 1,561 (males 888, females 673), with 299 from phthisis, making a total of 1,860, or 38·2 per cent. of the total deaths. The other hospitals in Turin give nearly the same fatal results. Comparing these results with the deaths in London, in 1853, from diseases of the respiratory organs, the Register-General shows that the total deaths were 61,202, and of these, 10,831 were from diseases of the respiratory organs, and 7,502 from phthisis or consumption; total 18,333, or 31·5 per cent. of the total deaths; while zymotic diseases give 13,552, or 22·1 per cent. It would seem to be a dangerous error, therefore, to fly to Nice, or Piedmont, to cure diseases of the lungs.

A few words may be given in conclusion before parting with this branch of the subject, on the per-centage mortality in the Sardinian civil hospitals, as compared with that in other countries. In the government returns a list is given of the principal civil hospitals in Piedmont, amounting to fifty, the mean mortality in which, from 1828 to 1837, was 11·71 to 100 patients treated, exclusive of those remaining under treatment. In twenty-nine hospitals the mortality was below the mean; and in twenty-one above it. The mortality ranged from 4·87 per cent., in the great hospital of Mauriziano at Turin, to 74·46 per cent., in the hospital of San Louis Gonzaga* at Turin, the next highest being in the hospital of Cottabengo at Turin, 47·50 per cent., and at Acqui, 43·80 per cent.; and in eleven hospitals the mortality ranged from 15·13 per cent. to 19·93 per cent. In the hospital at St. Rocco, at Nice, the mortality was 15·23 per cent.; and in that of Sta. Croce, also at Nice, 19·93 per cent. This high rate of mortality amongst patients would appear to characterize Italy, with the exception of Rome. In the Hôtel Dieu, at Paris,

* The reason of the great mortality in the hospital of St. Louis Gonzaga, at Turin, is, that the patients received are chiefly consumptive or suffer from cancer, marasmus, or [idropo-cronico] dropsy. The same is said of Cottabengo.

from 1798 to 1828, the mean annual mortality was 13·53 per cent.; St. George's, in London, 1815 to 1827 = 11·50 per cent.; the Imperial Hospital, St. Petersburg, 1796 to 1816 = 25·06 per cent.; Vienna, civil hospitals, 1823 to 1835 = 16·0 per cent.; Florence, St. Mary, 1835 to 1838 = 19·60 per cent.; Edinburgh, Royal Infirmary, 1808 to 1817 = 7·69 per cent.; Glasgow, civil hospital, 1808 to 1827 = 11 per cent.

A return, however, of the Register-General of the deaths in the hospitals of London, for the year 1851, gives a more favourable view of the success of our medical treatment; St. Thomas's hospital being 5·46 per cent., and St. George's 9·62 per cent.; the military hospitals not exceeding 2·66 per cent. (See next page.)

The following budget of the civil hospital at Nice shows the receipts and disbursements, and affords a standard of comparison with our own.

Civil Hospital Budget for 1854.

RECEIPTS.	Fr.	EXPENSES.	Fr.
Rent of houses, buildings, &c.....	9,089	Contributions Ordinaires.....	1,500
Fermages des biens ruraux	1,832	Repairs.....	200
Rents from the public debt	8,356	Annuities perpetual	50
Interest on capital lent.....	22,214	„ temporary	4,300
Produit des journées de prisonner } payées.....	9,700	Legacies for funeral and reli- } gious services.....	2,358
Fines transferred to hospital.....	565	Cost of external administration	1,943
Fractions	7	Salaries of hospital staff	7,070
		Cost of worship 50, alms to the } poor sick 3,060	3,110
	51,763	Keep of sick and servants:—	
Balance in Treasury....	39,422	Bread 8,000, meat 7,000, } vegetables 4,400, wood } 1,200, wine 5,000, petty } expenses 1,000	26,600
		Medicines.....	2,500
		Linen washing	2,000
		Casual expenses	100
			51,732
		Extraordinary expenses:—	
		Buildings	800
		Replacement of } capital	26,000
		Extraordinary } expenses	6,000
			32,800
		Balance in Treasury	6,653
	91,185		91,185

HOSPITALS, ASYLUMS, AND WORKHOUSES OF LONDON, 1851.

Number of Cases Treated; Inmates Resident, or Population; Deaths; Term of Residence; Deaths to 100 Cases; and Annual Deaths to 100 of the Population.

No. of District.		Total Cases Discharged, Cured, or otherwise, or Dead, 1851.	Average Term of Residence in Institution.	Average Number of Inmates in Institution.	Deaths 1851.	Deaths to 100 Cases.	Deaths to 100 Beds assumed to be continually occupied.
	Total	133,247	days. 92	34,766	8,169	5.91	23.50
	Workhouses	52,441	149	21,435	4,919	9.38	22.95
	General Hospitals ...	29,857	31	2,762	2,266	7.59	82.04
	Hospitals for Special Diseases	2,212	42	254	254	11.48	100.00
	Lying-in Hospitals ...	817	25	57	7	.86	12.28
	Lunatic Asylums	2,233	years. 1.68 days.	3,718	394	17.64	10.51
	Military and Naval Hospitals	9,495	22	584	228	2.40	39.04
	Hospitals and Asylums for Foreigners }	556	46	70	31	5.58	44.29
	Prisons	40,636	53	5,857	70	.17	1.20
	<i>General Hospitals.</i>						
3	St. George	2,650	28	275	255	9.62	92.73
4	Westminster	1,565	31	131	119	7.60	90.84
5	Charing Cross	1,195	31	100	79	6.61	79.00
7	Middlesex	2,327	40	255	173	7.43	67.84
9	University College ...	1,105	28	86	116	10.50	131.88
9	Royal Free	894	23	57	40	4.47	70.18
13	King's College	1,213	32	106	120	9.89	113.21
18	St. Bartholomew	5,950	32	522	414	7.46	85.06
22	London	4,071	28	308	258	6.34	83.77
27	Guy's	4,530	38	475	424	9.36	89.26
27	St. Thomas	4,357	38	419	238	5.46	53.01
	<i>Hospitals for Special Diseases.</i>						
10	Small pox	682	22	41	102	14.96	248.78
10	Fever	739	38	76	84	11.37	110.53
1	Lock	359	48	47	..	..	..
1	Consumption	432	76	90	68	15.74	75.56
	<i>Military and Naval Hospitals.</i>						
4	Grenadier Guards	1,319	20	74	32	2.43	43.24
4	Coldstream Guards	932	18	47	20	2.15	42.55
4	Scots Fusilier Guards	790	30	65	21	2.66	32.31
35	Royal Ordnance	4,222	22	260	47	1.11	18.08
36	Dreadnought Ship	2,232	23	139	108	4.84	77.70
	<i>Lunatic Asylums, &c.</i>		years.				
16	St. Luke	211	.91	193	20	9.48	10.36
20	Hoxton House (Miles')	190	1.90	361	29	15.26	8.03
21	Bethnal House (Warburton's)	216	2.48	535	56	25.93	10.47
25	Grove Hall (Bow)	345	.86	298	32	9.28	10.74
29	Bethlem	335	1.17	391	30	8.96	7.67
32	Surrey New County	289	2.87	830	121	41.87	14.58
33	Peckham House	303	1.27	381	32	10.56	8.33
33	Camberwell House	202	1.56	316	42	20.79	13.29
	Other small Asylums	142	3.11	441	32	22.54	7.26
	Number of Columns ..	1	2	3	4	5	6

Population of Nice.

Census of 1823, 27,000; 1838, 33,811; of 1848, 36,804 = 8·8 per cent.

	1838.		1848.		Increase per Cent.		Decrease per Cent.	
	Males.	Fem.	Males.	Fem.	Males.	Fem.	Males.	Fem.
Under 5 years of age	1,852	1,775	2,267	2,320	22·2	30·7	....	....
5 to 10 "	1,766	1,729	2,033	2,040	14·5	12·2	....	....
10 to 20 "	3,452	3,644	3,857	4,361	11·7	19·6	....	....
20 to 30 "	2,683	3,283	2,843	3,488	6·0	6·2	....	....
30 to 40 "	2,283	2,571	2,167	2,520	....	....	5·0	1·9
40 to 50 "	1,638	1,885	1,956	2,155	13·3	14·3	....	....
50 to 60 "	1,244	1,393	1,226	1,325	....	....	1·4	4·9
60 to 70 "	799	889	683	711	....	....	14·5	20·0
70 to 80 "	338	304	372	362	10·0	19·0	....	....
80 to 90 "	121	142	43	57	....	....	64·4	59·8
90 to 100 "	5	14	8	11	60	....	....	21·4
Above 100 "	1	....	....	1	....	100	100	....

	In 1838.		In 1838.
Males Unmarried	10,148	Females Unmarried	10,318
" Married	5,517	" Married	5,655
Widowers	517	Widows	1,656

	Houses.	Families.	Men.	Women.	Total.
Distribution in 1838 :—					
At the Port	36	329	635	747	1,382
Suburb St. Jean Baptist	63	254	583	539	422
Croix de Marbre	124	281	566	612	1,178
Beaumatès	115	264	566	561	1,127
Country houses	1,438	1,903	5,148	4,880	10,028
In town	1,236	4,530	8,684	10,290	18,974
					33,811

Medical men: Physicians, 29; surgeons, 27; apothecaries, 25; midwives, 16. Hospitals, 3; sick, 105; poor lodged men, 67; women, 165; houseless, 20 men, 20 women. In prison, 52 men, 17 women.

Population of Nice.—In 1823, the population of Nice amounted to 27,000; and there were only two first-class hotels—the York and Les Etrangers. In 1838, the population was 33,811; and in 1848, it had become 36,804, the increase in the decennial period being 8·8 per cent. Looking, however, to the increase or decrease in these ten years to the ages of the inhabitants, for quinquennial and decennial periods, there is reason to suppose that the increase is chiefly owing to the influx of labourers, mechanics, and others, with their wives and children, consequent upon the extension of the town by house-building and public works; for, in comparing the population returns for 1838 and 1848, the increase in the population stops at the age of 30 in both sexes, with two exceptional periods, at 40 years to 50, and 70 to 80; and the old people of both sexes have diminished, from 50 to 60, males 1·9 per cent., females 4·9 per cent.; 60 years to 70, males 14·5 per cent., females 20 per cent.; from 80 to 90,

males 64·4 per cent., females 59·8 per cent. There is also a diminution between the ages of 30 and 40, males 5 per cent., females 1·9 per cent.; but this may be accidental, as the increase between 70 and 80, of males, 10 per cent., and females 19 per cent., may be equally accidental. The chief increase is in children under 5; of boys, 22·2 per cent., and of girls 30·7 per cent.; the next greatest male increase is of boys from 5 to 10, of 14·5 per cent.; but the girls between 10 and 20 have increased 19·6 per cent. At 20 to 30, the male increase is only 6 per cent., and the female 6·2 per cent. In 1838, the females exceeded the males by 1,447; in 1848, by 1,894. In 1838, there were 517 widowers, and 1,656 widows; and there were 3,070 bachelors above 20 years of age, and 3,170 spinsters above 20. The return for 1848 does not give these details. There were only 322 Jews, and 214 Protestants, in the population of 1838; the rest were all Catholics. The preceding details are independent of the floating or casual population in 1838, consisting of the garrison 1,950, students 375, fishermen 161, labourers 1,719, families of strangers 212 = 1,272 souls, sailors 168; total 5,245. The casual population of 1848 I did not learn.

The *marriages, births, and deaths*, in the town of Nice and in the province of Nice, are given in the government returns for each year for 1828 to 1837 inclusive; but as the population is only given for 1838, namely, 33,811, the per-centages of the several years would only give approximations to the truth scarcely worth the trouble of calculating; I shall confine myself, therefore, to the marriages, births, and deaths of the nearest year to the census 1837. The births in Nice were 1,206, the average of the preceding years being about 1,100. This would give only one birth to every 4·6 pairs of the 11,172 married people in 1838, and one birth to 28 souls. The total number of births in 10 years was 10,968. In the province of Nice, the births in 1837 were 3,796, which, on a population of 112,433, would give 1 birth to 29·6 souls!! The total number of births in the province of Nice, in ten years, was 36,982. The marriages in 1837 were 267 at Nice, or 1 to 122·9 of the population; but in 1836 the marriages were 355, or 1 to 95·2 souls. The number of marriages in the province of Nice in 1837 was 800, which gives 1 marriage to 140·5 souls only; but the preceding year the marriages were 985, which gives 1 to 114·1 souls: the diminution in one case, and the excess in the other, may both be attributed to accidental circumstances. The deaths in 1837, in Nice, were 1,153, or 1 to 29·3 souls, or 3·4 per cent. This is a formidable rate of mortality compared with England, or even the worst English town. If we take the total number of deaths in ten years, 9,163, and allow each of these years to have had the maximum population of 1838, namely, 33,811, which we know cannot have been the case, the deaths would be 2·71 per cent., or 1 to 36·9 souls. In the province of Nice the deaths were 3,024 in 1837, or 1 in 37·1 souls, or 2·69 per cent. Pursuing the same calculation as for the term of assumed maximum population for each of the ten years, the result is 2·49 per cent., or 1 in 40·5 souls, being slightly in favour of the country districts over the town, as might be expected. But as such calculations are mere assumptions, they have not any statistical value, and only serve to strengthen our

confidence in the deductions from the single year 1837. The government returns for ten years give 1 death to 24.97 souls, or 4 per cent.; but whether by taking the means of the population and means of death for the ten years, I have not learnt. The deaths to the births in ten years are represented to be, males, 74.51 per cent., females 77.38 per cent.; both 75.90 per cent. The actual increase of the births over the deaths, in the province in ten years, was 8,913, giving less than 1 per cent. annual increase by births.

		Popula- tion, 1838.	Births.										
			1828.	1829.	1830.	1831.	1832.	1833.	1834.	1835.	1836.	1837.	Total.
Commune	} of Nizza	33811	1010	1108	1048	1070	1065	1095	1169	1095	1102	1206	10968
Province		} of Nizza	112433	3429	3760	3675	3755	3983	3591	3955	3827	3716	3796	36982
			Marriages.										
			1828.	1829.	1830.	1831.	1832.	1833.	1834.	1835.	1836.	1837.	Total.
Commune	} of Nizza	255	224	278	236	252	304	232	211	355	267	2614	
Province		} of Nizza	834	715	841	762	757	916	767	741	985	800	8116
			Deaths.										
			1828.	1829.	1830.	1831.	1832.	1833.	1834.	1835.	1836.	1837.	Total.
Commune	} of Nizza	956	833	775	750	843	1027	835	1222	789	1153	9163	
Province		} of Nizza	2670	2938	2457	2548	2529	2959	2906	3364	2674	3024	28069

In London, the mean of seven years, 1847 to 1853, the deaths were 2,489 per cent., or 1 to 40 of the population, varying slightly in the different districts: from 2.254, or 1 in 44, in the north districts to 2,670, or 1 in 37, south of the Thames.

Having discussed the population of Nice, it remains to state by what machinery it is governed, and what are its institutions and social conditions.

Intendence.—The civil government of the province and town of Nice is under the appellation of "Intendance-General," consisting of an "Intendente," corresponding to a *Préfet*, I believe, in France; a "sub (or deputy) Intendente," two councillors, and a chief secretary.

Municipal Council.—The municipal administration consists of a *syndic* or mayor, four deputy-syndics, and a secretary, all elected annually by the rate-payers. The duties of the municipal council

will best be shown by the following Agenda of the 7th March, 1853 "Entrepôt de la Douane," which embraces the purchase of the government arsenal for a customs warehouse, "Legacy of St. Agathe," "Petition of the Widow Tiranty," Embankment of the Arcane," "The Cemetery of St. Barthélemy," "Choice or selection of the *kind of Spectacle*" (performances at the theatre), "Project for laying out the Suburbs," "The Waters of St. Mauren," "Grant of land for a Salle d'Asile" (house of refuge), "Decision respecting the proposal of a transverse Royal Road," "Modification of the expenses of the Hospital of St. Roch," "Regulations of the rural Police," petitions, and other matters. This showed a tolerable amount of business for one day's deliberation. The municipal council has forty members, besides the syndics. The eight seniors go out annually, but are re-eligible. On the 17th July, about 400 votes were given; the highest of the eight candidates had 311 votes, and the lowest 127. There is also a "divisional," as well as "provincial," council for the county of Nice.

Police.—On the 24th April, 1853, the Sardinian government approved of regulations for the municipal police of Nice. These regulations are divided into chapters, and arranged under the following heads:—

Cap. I.—Municipal police; commissary; guards; agents; public works; town architect.

Cap. II.—Town arrangements; arrondissements; streets; commissaries of divisions.

Cap. III.—Professions; hotel-keepers; restaurateurs; inn-keepers; pot-houses; wine sellers, pastry-cooks, cafés, &c.; blacksmiths, wheelwrights, and trades generally; labourers and servants.

Cap. IV.—Public safety and salubrity; fastening doors; balls; masques; carnival amusements; baths; burial of dead animals; cloacinae; watering streets; muzzling dogs; inspector of markets; markets to distinguish those for the sale of herbs, fruits, champignons, orange-flowers, oil, grapes, firewood, from the bakers and vermicelli-makers; the meat-market: animals to be killed only in the abattoir; the different meats to be lettered and ticketed with prices; weights and measures, &c.

Cap. V. regulates the safe passage of the streets by horses, mules, &c.; projecting roofs, façades of houses, shop-windows; games; public carriages, carts, &c., blocking-up streets; pavements; people working in the streets; projections from magazines; contracts for street sweeping, &c.

Cap. VII. regulates the octroi or barrier-tax.

Altogether there are seventy-four octavo pages of regulations, embracing, apparently, every possible question of internal management; and many of these regulations would afford very useful hints to our own municipalities.

Theatres.—As far as these regulations affect the theatre, the following details will illustrate their bearing. On the 1st September the syndic or mayor, on the part of the municipality, put up to public auction the first, second, and third tiers of boxes. The first two boxes were put up at 400 francs (16*l.*) for the season, commencing the 15th October, and ending the 15th April; and the 3rd tier was

put up at 250 francs—two boxes upon each tier being reserved for the authorities, and the whole theatre being subject to be twice claimed for balls or concerts for the benefit of the poor. The biddings ranged from 500 to 663 francs, for each box of the two lower tiers; and one stage-box brought 850 francs (34*l.*); and the sum realized for these two tiers was 8,839 francs. A family may secure a box at the theatre for the season, where operas alternate with plays, for a sum ranging from 20*l.* to 34*l.*; but an entrance of 1 franc, 20 centimes (one shilling) is exacted from each visitor. The municipality make an annual arrangement with a director of the theatre, who collects his own company.

Gaming Banks.—In connexion with the municipality regulating public amusement, and to show up the enormous profits of a licensed gaming-table, like those of Baden Baden, Homberg, and other places, it may not only be in place, but possibly useful, to state that, on the 19th September, 1853, the municipality of Nice accepted an offer by Mr. Schneider that, in consideration of a license for fifteen years to keep a gaming-table, in connexion with a casino, he would pay to the municipality annually, for the first five years, 30,000 francs, for the next five years 35,000 francs, and for the last five years 40,000 francs; that he would build a suspension bridge passable for carriages, without toll, over the mouth of the Paglion, and establish hot baths, the building and furniture of which should not be less in value than 100,000 francs; and that, at the expiration of his term, he would hand over the same to the town; and that he would submit to such regulations as the municipal council might pass from time to time. Fortunately for the reputation, and probably ultimate well-being of the town, the confirmation of this agreement rested with the Minister of the Interior at Turin, and he negatived it. This refusal caused very angry comments in the newspapers at Nice, and ineffectual efforts were made to overcome the minister's objections. The result was the opening the casino (assembly and reading-rooms) without the gaming-table.

Gas.—A more beneficial exercise of the powers of the municipality took place by carrying out an agreement with the Central Gas Company to light the town. Considerable delay had occurred in getting pipes and the gas apparatus from England; but in February, 1854, the arrangements were approaching completion, and the company advertised their terms of supply, which, it is to be feared, are so high (possibly unavoidably) as to limit the consumption.

Charge per Month.

	From Dark to	Fantail Beak.	Beak of 16 sets.
		fr. c.	fr. c.
10 o'clock		10 50	7 50
11 o'clock		13 0	9 0
12 o'clock		15 0	10 50

By measurement 50 centimes, or half a franc the square metre.

Taking the lowest charge, the single beak to 10 p.m. only, the cost per annum would be 90 francs (3*l.* 12*s.* 6*d.*), a sum beyond the means, I presume, of the generality of the shopkeepers. The fantail light, burnt to midnight, would cost 180 francs per annum, or 7*l.* 4*s.* 2*d.*

Naming Streets and Numbering Houses.—Up to February, 1854, Nice had not advanced so far as to have a systematic naming of her streets and numbering of her houses, and her municipality had, in consequence, been exposed to a good deal of ridicule. The houses were distinguished only by the names of their owners. L'Avenir de Nice of the 8th September, 1853, sarcastically illustrates the want, by supposing a message to be received from Turin that a criminal is secreted in the house called "Tiranty," on the fourth story; but as there are eight mansions called "Tiranty," belonging to different members of the same family, not far from each other, the police, of course, do not know to which to go; and when it is at last found, the criminal had made his escape two hours before. The editor said, all the help he could give was to indicate the bearings by compass of the eight houses from the Pont Neuf. Rubs of this kind at last stimulated the municipality to set about the matter; and when I left Nice in February, people were being employed to paint numbers on the doors.

Mosaic Trottoirs.—Most of the trottoirs in the principal streets are creditable to the taste of the municipality. They are mosaicked in various patterns and devices, by means of small blue, grey, and whitish calcareous pebbles, ranging in size and form from a pigeon's to a hen's egg, and the effect is very pleasing; nor are the feet pained in walking on them.

Finances.—The budget of the municipality for 1854 shows the means at its disposal, to cover permanent charges, and to provide for town improvements. It is divided into eight chapters; and, without entering into details, I give the chief items of receipt.

	Francs.
Chap. 1.—Balances	11,582
„ 2.—Revenue of communal property	29,156
„ 3.—Aids of other communes	762
„ 4.—Various revenues—subsidy by Government for the royal roads through Nice	6,000
„ 5.—Various taxes—octroi 230,000, compositions, let- tings, tolls, &c. 2,000	232,504
„ 6.—Extraordinary receipts:—	
From the State for beggars forwarded	2,000
For military transports	600
Sale of land	5,000
Concession of land in the country.....	4,000
Sale of land in the Boulevard du Midi.....	10,000
Legacy to the town by the Count de Barthe, &c.	6,000
„ 7.—Prestation	6,000
„ 8.—Revenue of the works of Rosetti.....	60,035
Total.....	370,774 = £14,831

There is little calling for notice in these receipts, except that above 60 per cent. arises from the barrier-tax upon articles of consumption.

The budget of expenditure for 1854 is divided into active and passive, each of ten chapters or heads.

Nice Budget of Expenditure, 1854.

	Francs.
CHAP. 1.—Interest on debts	44,008
" 2.—Expense of administration :—Office, paper, &c. 4,500, indemnity to syndic 1,500, salaries 18,125, agents of the octroi 8,585, municipal guards (25) 11,770, octroi office 2,400, &c.	56,062
" 3.—Cantonal expenses :—Justice of the peace and officers	1,510
" 4.—Town and rural police, sanitary matters, &c. :—Lighting the streets 22,000, pavements 5,000, fire engine 200, 3 medical officers for the poor 1,200, the midwife (sage femme) of the town 500, foundlings 3,000, commissary of police 1,000, municipal secretary 1,200, superintendent of markets 1,000, food for the poor 2,000, help to women in childbirth, &c. 600	53,583
" 5.—National guard :—Expenses	9,070
" 6.—Public works :—Repairs, promenades, fountains, trees, cantonniers, &c.	19,980
" 7.—Public instruction :—Books for the public library 3,000, rent of library and cabinet of natural history 1,150, rent of communal schools 1,525, salaries of professors and schoolmistresses 14,550, grant to the national college 5,000, annual prizes for the schools of design and sculpture 150, schools of physic, chemistry, and anatomy 1,200, curator of the cabinet of natural history, &c. 600	28,475
" 8.—Worship and burial grounds :—Wax tapers, masses, patron-saint's day, organist of cathedral, cemetery, &c.	2,084
" Miscellaneous charges :—Unforeseen 12,000, national fête, &c. 2,000, grant to the theatre, &c. 5,000, rent of tribunal and chamber of commerce, 450	21,680
" 10.—Special charges :—The work of Roselli, 60,035, &c.	65,035
Total Active.....	302,490

2nd Part. Passive.

	Francs.
Sinking Fund	4,580
CHAP. 6.—Public works :—Roads 4,500, provincial roads 12,000, new hospital 10,000, new fountains 3,000, for removal of houses 13,680, for streets at the harbour 12,000, purchase of the arsenal and construction of an entrepôt for merchandize, 60,000, naming streets, &c. 2,973, &c.	144,840
" 7.—Instruction :—Public and rural schools 2,000, grant to the école de commerce 2,000, extraordinary expenses for the communal schools, in conformity with the legacy of the Count le Barthe 6,000, (last year) grant to elementary school of national college 1,000, &c.	3,850
" 8.—Worship and burial grounds :—Finishing the new church at the harbour 3,344, subscriptions for buying the organ of St. Reparata 1,000, for the burial ground of St. Barthélemy 1,893, &c.	7,016
" 9.—Miscellaneous expenses :—Grant to chamber of agriculture, &c.	1,200
" 10.—Special expenses :—Grant to a poor house to be opened 3,000, grant to the asylum 1,500	4,500
Total Passive.....	162,987
" Active	302,490
465,477 = £18,619	
Budget of receipts... 370,774	
Deficiency	94,706
465,477	

The budget of expenditure amounts to 465,477 francs (18,619*l.*), leaving a deficiency of receipts to cover the expenditure of 3,788*l.* Many of the proposed grants are highly praiseworthy, and exhibit an enlightened spirit. For medical officers for the poor, a town midwife, food for the poor, help to women in childbirth, books for the public library, public instruction, salaries of schoolmasters, rent of school-houses, prizes for schools of design and sculpture, grants to schools of physics, chemistry, and anatomy, roads, new hospital, and, by the side of these grants, are those for wax-tapers and masses.

Military Defences.—The sub-division of Nice is under the command of a major-general, with two staff-officers attached; and the garrison consists of two regiments of infantry, a battery of artillery, and a company of carbineers.

Judicial Establishments.—The administration of justice in Nice and the province is by means of a court of appeal and tribunal, each divided into two chambers. The first chamber of the court of appeal has a president and six councillors; the second chamber has a president and six councillors, a secretary and two deputies; the advocate-general and four substitutes, and secretary; an attorney for the poor, and three substitutes. The tribunal of first instance, in the first chamber, has a president and three judges; in the second chamber, a president, two judges, two assistant-judges, an avocat-fiscal, and two substitutes; an assistant-judge, a judge “instructeur,” and an assistant judge and a secretary.

But these arrangements would appear likely to be altered by the following proposed judicial system for Sardinia recently laid before the chambers by the minister of justice:—

Procu- rators of Poor.	Substi- tute Procu- rators for Poor.	Il- luis- siers.	Francs. Total		1st Presi- dent, Fr.	2nd Presi- dents, Fr.	16 Coun- cillors, Fr.	Pro- cureur- General, Fr.	1st Sub- stitute Fr.	2nd Substi- tutes, Fr.	Secre- tary, Fr.	Sub- Secre- taries, Fr.
			221,500		15,000	12,000	8,000	15,000	8,000	Fr. 7,000 6,000	Fr. 7,500	Fr. 2,000
6	13	24	1,085,100	6 Courts of Ap- peal:— Turin, Genoa, Casal, Cham- bery, Cagliari, Nice.....	6	7	117	6	6	6	20	
1	1	3	...	Nice.....	1	...	10	1	1	1		...
			1,130,000	46 Tribunals of Première In- stance:— Nice	1	1	4*	1	2	...	...	...
		Total	3,177,400	509 Judges de Mandement, 1,200 to 2,000 Francs each								

* Judges.

By this plan Nice would have only one first president for the court of appeal, ten councillors, one procureur-general, one first substitute, two second substitutes, one attorney for the poor, three court-criers, and two secretaries. The tribunal would have one first and one second president, four judges, one procureur-general, and two substitutes. For Sardinia, the total establishment would be six courts of appeal, forty-six tribunals of première instance, and 509 justices of the peace. Gentlemen learned in the law in England would look aghast at the salaries of the Sardinian judges. A president of the court of appeal, 600*l.* per annum; second president 480*l.*; councillor 320*l.*; procureur-general 600*l.* per annum; first substitute 320*l.*; second substitute 240*l.* to 280*l.*; secretary 300*l.*; first president of the criminal court 600*l.* per annum; second ditto 480*l.*; a judge 320*l.*; the justices of the peace from 48*l.* per annum to 80*l.*

Education.—From the budget of the municipality, it would appear that the authorities are not negligent with respect to this important matter. There are town, commercial, and rural schools, male and female; and pecuniary aid is given to the schools of art and design, physics, chemistry, and anatomy. There is a public library of 24,000 volumes, and a museum of natural history open gratuitously daily. On the 3rd November, 1853, a new school or college, called L'Ecole de Commerce, was opened on a broad basis, having various professors. The building comprises study-hall, hall of classes, chemical laboratory, museum, hall of the arts, covered place for exercise, chapel, infirmary, laundry, wardrobe, &c., and a set of meteorological instruments were being brought into use when I left in February last. But the promotion of education is not confined to the means of instruction: care is taken that the teachers are competent to their labours; and on the 25th July, 1853, the Intendant-General, as President of the Council of Instruction in the province of Nice, republished the regulations of the 13th January, 1846, to insure the qualifications of teachers; to the effect, in reference to female teachers, that, after the 10th August, 1853, normal and preparatory schools would be established for the instruction of school-mistresses. At the same time, all the school-mistresses, or female instructors, who might wish to carry on their occupations, must appear to be examined, to prove their qualifications, provided they have not been examined as prescribed by the regulations of 1845. Applicants for the normal schools not to be under eighteen years of age, and to be provided with certificates of religious and moral conduct, and of health; and on passing, they would be furnished with diplomas.

Learned Professions.—Nice would not appear to be wanting in persons of the learned professions. There are forty-three doctors of medicine and surgery, Italian, French, and English, of whom three are English. There are 8 professors of the French language and science, 2 of English, 9 of Italian, 2 of German, and 2 of Spanish; 5 schools or colleges for boys, and 5 for girls; 16 professors of painting and drawing, 1 of writing, 2 sculptors, 2 of singing, 2 of music, 1 of dancing, 1 of fencing, 1 of horsemanship, and 1 of gymnastics.

Newspapers.—Nice supports three newspapers: "L'Avenir de Nice," a liberal daily paper, in French, ably conducted, and with the

leaders occasionally powerfully written. The "Nizzardo," a liberal paper, in Italian, appearing twice a week; and "La Sentinella Cattolica," in Italian, in the interest of the clergy. Newspaper literature would appear to be very popular in Piedmont, judging from the number which passed through the post-office at Turin between the 20th and 25th April, 1853, of which I have appended a note.* The total number of newspapers which passed through the Turin post-office in 1852, was 4,779,073, for the Sardinian states and for foreign countries 132,171—total 4,911,244. The price of the daily newspapers ranges from a halfpenny to twopence, and some of them are illustrated by wood engravings or lithographs. Although all these indications of intellectual progress are satisfactory, yet they are comparatively of but recent origin and of limited bearing, if the state of instruction in the Sardinian states be correct, as described by Professor Bertie in a letter to the "Parlamento," and republished in "L'Avenir de Nice" of the 3rd March, 1853.

State of Instruction in the Sardinian States, from a Letter of Professor Bertie, published in the "Parlamento." L'Avenir de Nice, March 3, 1853.

Division.	Men.	Women.	Division.	Men.	Women.
	Per Cent.	Per Cent.		Per Cent.	Per Cent.
Turin	44	20	Alexandria	27	10
Chambury	40	21	Savone.....	27	8
Vercel.....	38	14	Genoa	22	12
Nice.....	36	8			
Ivrie.....	35	14	Isle of Sardinia :		
Novare.....	34	15	Sassari	11	1
Coni.....	30	12	Cagliari	8	1
Anney	28	22	Nuovo	6	....

The above statistics relate to grown-up men and women apparently, and not to the population.

* The Parlamento of the 1st May, 1853, (Turin) gives the following statistics of the newspapers posted in Turin from the 20th to 25th April:—

Daily.

Gazetta del Popolo	3,330	Opinione	857
Parlamento	2,428	Voce della Libertà	776
Gazetta Piemontese	1,824	Espero	103
Campana	1,474	Le Sintelle	57
Fischietto	1,095		

Periodical Papers, not Daily.

L'Armonia	1,239	Gazetta Medica'e	277
L'Institutore	784	Medicina Militare	161
Bollettino Commerciale	423	Accademia Medico Chirurgica	150
Il Pirata	399	Nuovo Fischietto	147
Buona Novella	289	Bandiera Nazionale	120
Monitore Militare	210	L'Imparziale	49

The whole number of papers which passed through the Turin Post-office in 1852, was—

For the Sardinian States.....	4,779,073
For foreign countries	132,171

4,911,244

According to this statement, Nice has only 36 men out of 100 who have had school instruction, and only 8 women in 100; but Genoa is still lower in the scale (22 men), but a little higher with the women—12 in the 100. The highest proportion for men is 44 per cent., at Turin, and with 20 per cent. for women; but the highest proportion of school-instructed women is 22 in the 100, at Annecy.

Religious Establishments.—Nice has a cathedral, "Sainte Reparatrice," originally built in the twelfth century, but enlarged in its present form in 1650. There are also six parish churches and six chapels, all for Roman Catholic worship. The English, French, and Italian Protestants have also each a place of worship; and the Jews have a synagogue. At thirty minutes drive from Nice, on Mount Cimies, there is a convent or monastery of Recollets (Franciscan), some of whom make their appearance daily in the town, with their sacks, begging from door to door. Nice has a bishop, seventeen canons, one collegiate, and four collegiate canons; and there are 150 parishes in the province, each with its priest. In the Sardinian states there are forty-one divisions or provinces, 4,242 parishes, 695 canons, 79 colleges, and 855 collegiate canons. In the Terra Firma, or continental division, there are, secular and regular clergy, not including convents of women, seminaries, noviciates, &c., 17,860, and in the isle of Sardinia 4,277, making a total of 22,137 clergy, or nearly 1 ecclesiastic to 222 inhabitants. The bishops and canons bear the following proportion to the inhabitants in the Sardinian territories, compared with France and Belgium.

States, 1842.	Inhabitants.	Bishops.	Canons.	1 Bishop for Inhabitants.	1 Canon for Inhabitants.
Piedmont.....	3,787,660	26	1,290	145,679	2,936
Savoy	584,083	4	44	146,022	13,276
Sardinia	547,112	11	216	49,737	2,337
Sardinian States	4,918,855	41	1,550	119,969	3,173
France	35,784,628	80	836	447,270	42,800
Belgium	4,409,386	6	75	734,898	58,794

Sardinia has, therefore, four times the proportion of bishops of France, and nearly seven times the proportion of Belgium; fourteen times the proportion of canons of France, and 19 times the proportion of Belgium.

A painful circumstance was stated in "L'Avenir de Nice," of the 15th September, 1853, that the body of the celebrated violinist Paganini was still at Nice, and unburied in consecrated ground, after a lapse of ten years, in consequence of the Bishop of Nice having refused the rites of sepulture, Paganini not having taken the sacrament before his death. His heir appealed to the Archbishops' Court at Genoa, which decided in favour of the heir. The Bishop of Nice carried the appeal to Turin, where it was equally decided in favour of the heir. The Bishop of Nice now appeals to Rome, and the body still remains unburied in consecrated ground.

Representation.—Nice sends two members to parliament; and the right to vote is with the rate-payers, assessed to a certain amount. There are two electoral colleges in Nice, and the votes inscribed in one are not available in the other. A general election took place on the 8th December, 1854, and there were 702 votes inscribed in the first college, of whom 543 took out their tickets to vote. In the second college 196 names were inscribed, of which number 139 took out their cards. Although the elections were contested in both colleges, there was little bustle, no hustings, no processions, flags, music, or speeches; and everything appeared to be done in a calm business-like manner; and the only agitation appeared to be in the distribution of short printed addresses to the electors,* for a few days previously, and an article or two in the newspapers. As in the two colleges on the 8th no one candidate obtained the requisite majority, the election was repeated on Sunday 11th December.

Prices.—The prices of 1853 are necessarily abnormal from the scarcity which prevailed over Europe, and particularly in the two chief products of consumption at Nice—wheat and wine, the latter owing to the vine disease, which not only enhanced the price of wine above a hundred per cent., but gave bad wine instead of good. I shall not, therefore, quote the prices of the cerealea or wines.

Prices.

	1841.			January, 1854.
	Italian Measures.	English Equivalent.	Price.	
Wheat	La charge	94 Kil.	30 francs	
Barley	Idem	....	18 "	
Beans	Idem	....	20 "	
Hemp	Quintal	90 lbs. troy	50 "	
Finest olive oil, 19 lbs. avoird...	Rub.	25 "	16 "	16 francs
Fine do., eatable.....	Idem	....	14½ "	
Common oil	Idem	....	7 to 9½ "	10 "
Red Bellet wine, 4 to 5 years	Rub.	25 lbs. 12 bottles	4½ "	} The Vin de Suse has greatly enhanced prices
" 6 to 7 years	Idem	....	6½ "	
Sweet oranges, 360 the box ...	Box	....	21 "	
" 240 "	Idem	....	17 "	
The finest oranges per 1000....	1,000	....	12 "	
Dried figs	Rub.	....	8 "	25 kilo.
Candied fruits	Idem	....	16 "	
Pastes, macaroni, &c.	Idem	....	4 "	
Firewood	Quintal	150 lbs. to 1 cwt.	24 sous	30 sous

* ELETTORI.

Volete conservare le libere istituzioni ?

Vi sta a cuore la posizione del vostro paese ?

V'interessate alla classe operaia ?

Ebbene eleggete i candidati che un' amico dell' operajo vi offre.
e sono,

1°. COLLEGIO.—Avvocato Commendatore Giovanni de Foresta.

2°. COLLEGIO.—Dottore Commendatore Battista Bottero.

N.B.—Fate attenzione che i voti del 1°. Collegio non servono pel candidato del 2°. Collegio; come neppure non servono i voti del 2°. Collegio pel candidato del 1°. Collegio.

Prices—continued.

	1841.			January, 1854.
	Italian Measures.	English Equivalent.	Price.	
Turf	Sack	....	30 sous	
Charcoal	Rub.	25 lbs.	11 to 14 "	14
Beef, roasting (with bone 4½ } sous)	lb.	....	6 to 7 "	{ 6 sous, or 23 to 26 per kilo. = 5½d. per lb. avoird.
Mutton	Idem	....	5 to 6½ "	{ 9 sous, 26 kilo., = 5½d. per lb. avoird.
Veal	Idem	....	7 to 8 "	8 " "
Fish	Idem	....	3 to 10 "	3 to 30 sous
Bread, finest	Idem	....	3 "	3 to 4 "
Potatoes.....	Rub.	....	....	40 " formerly 20
Eggs	Dozen	....	9 "	18 "
Do., fresh laid	Idem	....	18 to 20 "	20 to 30 "
Milk	Pint	....	4 "	5 "
Washing small things	Dozen	....	20 "	24 "
Vin de pays, common	Rub.	12 bottles	45 "	12 = 144 sous per rub.
Loaf sugar	lb.	....	7 "	6 to 8 sous
Coffee, roasted	Idem	....	16 "	12 to 36 "
Soft sugar	Idem	....	5 "	4 to 5 "
Large duck .....	....	....	....	55 "
Fowls.....	Each	....	18 to 30 "	20 to 35 "
Capons	Idem	....	50 to 60 "	35 to 40 "
Turkeys.....	Idem	....	80 to 120 "	4 to 6 francs
Hares.....	Idem	....	70 to 80 "	" "
Partridges	The brace	....	80 "	" "
Woodcocks	Idem	....	80 "	" "
Greves or thrushes	Dozen	....	48 "	4 to 5 "
Female house servant	Month	....	5 francs	5 to 15 "
" cook	Idem	....	20 to 30 "	" "
Man servant	Idem	....	30 "	20 to 37 "
1st floor of apartments, 6 to 8 } rooms	6 months	....	3000 to 4000 fr.	About the same
2nd " .....	....	....	2000 to 3000 "	
3rd " .....	....	....	1500 to 2000 "	

Country houses from £120 to £300. The season, which commences 1st October, ends 15th May. At the Hôtel Pension Anglaise a single person may board and lodge for 150 francs a month.

Annual cost of carriage and pair:—Coachman's wages	300 Fr.
" Do. board	300
" Each horse, 300 francs	600
" Stabling and wear and tear of carriage	300

1,500 = £60.

On the 6th December, 1853, a riding-horse was advertised to let at 70 francs a month, or about 12s. a week. The kilo. is 38½oz. of Nice.

Winter Families.—Nice derives much of its well-being from the influx of families from various parts of Europe during the winter. The following table shows that this influx emanated from fourteen nations, and in the season of 1852-3 consisted of 777 families. The season of 1853-4 was looked upon as a bad one; and there were great lamentations about the number of vacant lodgings.

Germans.	Americans.	English.	Belgians.	Spaniards.	French.	Dutch.	Italians.	Poles.	Prussians.	Russians.	Swiss.	Svedes.	Various Nations.	Total.
32	10	208	5	4	357	6	81	11	7	23	14	5	14	777

The French exceed the English; but these two nations exceed all the other nations put together.

Post-Office.—Postage-stamps are used in Sardinia of the value of twenty-five centimes, or $2\frac{1}{2}d.$ for a single letter.

Money.—The money, weights, and measures of Piedmont are those of the decimal system of France—metres, millimetres, kilogrammes, francs, and centimes, &c.; and, considering the presumed difficulty in the introduction of a new system, amidst a people so wedded to usage as the Italians, and who were so inadequately instructed, the success of the attempt may teach our objectors to the introduction of the decimal system into England a salutary lesson, that the good sense of a people in the end reconciles them to national changes, which, in the first instance, are irksome and distasteful because they are new. Indeed, such have been the effects in Piedmont, that some of the ancient copper coins, with the effigy of Victor Amadeus upon them, of the value of twenty and ten sous, have now a current value of only eight and four sous. Personally, in drawing up the preceding paper, I have daily had to lament a waste of time and exhaustion of patience in the reduction of the decimal standards of France and Italy into our heterogeneous and unconformable monies, weights, and measures; and I must indulge in the expression of hearty wishes that we may speedily be released from our system which is not less unphilosophical in its arrangement than it is burthensome and embarrassing in practice.

On the Effect of Good or Bad Times on Committals to Prison.

By THE REV. JOHN CLAY.

[Read before the Statistical Section of the British Association for the Advancement of Science, at Liverpool, 23rd September, 1854.]

It has long been a popular opinion that committals to prison increase under the pressure of "*bad times*," and diminish when that pressure is removed. This opinion appears to be in many respects erroneous; and it may not be useless, therefore, to show how, in reality, crime and disorder, as indicated by committals to prison, are affected by the vicissitudes in the industrial and social state of the working classes.

The facts and observations which I have to submit are drawn from the annual reports which it has been my duty to present to the magistracy of Lancashire since 1824. They relate to the county house of correction at Preston—the chief prison for the northern division of Lancashire—which division includes the large manufacturing towns of Preston, Blackburn, Burnley, Chorley, Haslingden, Accrington, &c. The population of North Lancashire was 402,600 in 1841, and 461,400 in 1851*. My report for 1826 contained the first notice of the connexion between distress and committals; and I therefore venture to quote the following passage in it:—"The interval between July, 1824, and July, 1825, was one of general prosperity and comfort among the labouring classes of the surrounding district; that from July, 1825, to July, 1826, included a period of perhaps unprecedented distress. Yet, in this latter period, the felony list presented no augmentation. . . . While 40,000 or 50,000 of the poor were existing upon charitable contributions, it cannot be ascertained that a single theft (recorded in the calendar) was caused solely by hunger. The few persons who pleaded distress as an excuse for their offences were, in every case, old offenders."

During the prevalence of this distress, I had many opportunities of witnessing what I have often seen since, the fortitude and patience exercised by the working classes in times of suffering, and the admirable self-denial with which many, who were themselves in poverty, assisted the utterly destitute. From a table given in my report for 1830, it appeared that, during the four ordinary years ending with June, 1824, the annual average of committals to the sessions was 119; the prosperous year 1825 produced 177 committals; the following year of distress, 172; and the year of reviving prosperity (ending July, 1827) no less than 269.

"This lamentable anomaly in the moral condition of the working classes can only arise from the fact that high wages, to the ignorant and uneducated poor, bring with them the means of gratifying the propensity to intoxication, which is so fatal to their comfort and character."

* The Hundred of Lonsdale commits *cases for trial* to the Lancaster sessions. These cases—few in number—are therefore excluded from consideration. All offenders *convicted summarily* are sent to Preston. This having been the invariable practice, the question treated of in this paper is not affected by it.

The opinion thus expressed a quarter of a century ago has been but too well confirmed by the experience of every succeeding year.

The ten years ending with June, 1844, were marked by several events greatly prejudicial to the moral and industrial welfare of the working classes in North Lancashire. In 1836-7, a spinner's "*strike*" at Preston threw nearly 9,000 hands out of employ for about four months. Nearly two-fifths of these hands were under nineteen years of age; and the consequence was a great increase in the number of *young* offenders committed to the sessions. It was noted, however, at the time, that "idleness and not want had been the immediate cause of crime in almost all the cases which could be clearly referred to the "*strike*."* And even in this year of distress, the committals to the sessions were less by fifty-nine than those of the corresponding period ten years before, when "employment for the poor had again become pretty well distributed."† From 1838 to 1842 (with a favourable interval in 1840), want of employ and consequent privation gradually pressed more and more upon the manufacturing population of North Lancashire, until, in the winter of 1842-3, their sufferings became severe almost beyond example. At this time, also, a spirit of sedition and riot had loosened the restraints which the masses in North Lancashire are usually willing to acknowledge; and the autumn of 1842 was marked by an amount of agitation and violence which betokened no slight danger to the permanent welfare of the manufacturing districts. Two years before this time, however, and owing, no doubt, to the growing (and providential) conviction of the necessity for such a measure, the county police force had been organized; and it was now found capable of arresting and of permanently subduing the dangerous spirit which had been excited into action. Under all these circumstances, therefore, a considerable increase in committals might be expected. The zeal and activity of the new constabulary added to the number of apprehensions and committals, though there might be no corresponding increase of actual crime. Political disaffection encouraged dishonesty and violence to an extent which poverty alone would not have provoked; at this time, also, prison discipline in North Lancashire was in a state calculated to promote rather than repress crime; and to all this it may be added that, hitherto, little or no progress had been made in efforts to extend the benefits and blessings of education.

"Of ninety-six men tried for riot, &c., in the Chartist outbreak in the autumn of 1842, sixty were unable to read, and thirty-six were ignorant of their Saviour's name."

I present a summary of the committals for the ten years now treated of, in which it will be observed that, in the year of greatest distress, the ordinary committals were 20 per cent. below those of the preceding year. In order to free a comparison between the several years from the effects of temporary or accidental influence, the following offenders are excluded:—1, soldiers under sentence of court martial; 2, debtors; 3, females under *summary* conviction;‡

* Report for 1837.

† Report for 1830.

‡ These are excluded because at one time they were committed to Lancaster Castle and at another to the Preston house of correction.

4, Chartist rioters. The remarks are literally or substantially quoted from the reports of the respective years:—

Year ending 1st July.	Committed to Sessions.	Committed Summarily.	Remarks.
1835.....	168	642	{ “Spinner’s strike, which lasted from the end of October to February.”
1836.....	187	715	
1837.....	277	627	{ “Suffering among hand-loom weavers.”
1838.....	302	762	
1839.....	361	655	{ “High price of provisions and scarcity of employ.”
1840.....	394	937	
1841.....	485	901	{ “Increase of committals mainly attributable to the establishment of the County Police.” “No want of employ, and times favourable.”
1842.....	611	1,053	
1843.....	497*	1,215	{ “Trade in a depressed state.”
1844.....	433	894	
			{ “Great and prolonged suffering.”
			{ “The depression at its lowest point.”
			{ “Full employ. Prison discipline well established.”

* This number is exclusive of 123 Chartist rioters.

The next ten years, ending with June, 1854, embraced two seasons of great manufacturing prosperity and one of extreme distress. The following is a short summary of the period, framed on the same principle as the one given above:—

Year.	Sessions’ Cases.	Summary Convictions.	Remarks.
1845.....	301	700	{ “Abundance of work. Prison discipline in beneficial operation.”
1846.....	289	666	
1847.....	366	646	{ “Occupation at the factories not so readily obtained. Many hundreds of hand-loom weavers out of employ.”
1848.....	343	843	
1849.....	339	1,279	{ “Never have the combined evils of scarcity of food and scarcity of employ pressed so heavily.”
1850.....	325	1,323	
1851.....	387	1,456	{ “The distress at its maximum.”
1852.....	417	1,226	
1853.....	442	1,012	{ “Times greatly improved.”
1854.....	470	957	
			{ “A period of great and continued prosperity.”
			{ “The Preston strike.”

The first season of prosperity (ending with June, 1845) occurred at a time when a vigorous and reformatory prison discipline had begun to develop highly satisfactory effects in the decrease of committals, and especially of recommitments. The manufacturing distress which followed in 1847-8, unlike that of 1842-3, was attended by no Chartist excitement, nor by any other influence likely to aggravate whatever tendency to crime distress might have created.

In my report for 1847, I observed: “Never within the term of

my chaplaincy have the combined evils of scarcity of food and scarcity of employ pressed so heavily as during the last winter; and never—to the great credit of thousands of sufferers—have offenders pleading distress for their faults been fewer in number.” Yet, in these very hard times, the committals to the sessions were not increased to the extent which might have been expected, and the summary convictions were fewer than they had been for ten years.

The increase to the sessions, as invariably the case in times of compulsory idleness, and as previously exemplified in the strike of 1836-7, consisted almost entirely of boys. “It is chiefly from among the *idle*, not the *hungry*, factory-boys that the additions to our year’s calendar are drawn.” “Juvenile delinquency (as compared to the preceding year) was increased to the amount of 92 per cent.* In the winter of 1847-8, distress pressed upon the operative classes with a severity never before exceeded, perhaps never before equalled. My report for that year contains a table framed from data collected by the chief constable of the county, Capt. Woodford, “showing the absence of any marked connexion between poverty and crime, as well as *the creditable disproportion between sufferers and offenders.*” It appeared from the returns in question that, during this disastrous period, 45,000 mill-hands in North Lancashire, irrespective of other operatives, were either working short time, or were altogether unemployed; and that in the Preston Union nearly 12,000 *adults* were receiving out-door relief; yet the committals to the sessions, so far from exhibiting an increase, showed a decrease of nearly 7 per cent. on the committals of the preceding year.

The excess of summary convictions in 1847-8 arose chiefly from vagrants and workhouse disorderlies.† In 1849, the prosperity, which had ebbed so far and so long, began to flow once more through our manufacturing districts, until in the summer of 1853 it reached a height seldom equalled in the industrial history of the country. But the figures in the preceding page bear witness that this tide of material benefit was productive of—at least accompanied by—no little moral wreck. When the season of suffering had passed away it became too manifest that the wholesome lesson which it might have taught had been neglected. Thousands who had resisted the temptations of distress yielded to the temptations of prosperity. Good wages were too often squandered in vicious indulgence; and committals for offences occasioned by drunkenness began and increased with lamentable rapidity. If a comparison be made between the crime and disorder attendant on the three years of operative distress (1846 to 1848) and the four years of abundant work and high wages (1850 to 1853), it will be found that the average yearly

* Report for 1847.

† In the very valuable report of Capt. Willis, the Chief Constable of the borough of Manchester, for 1847, that gentleman expresses his satisfaction that “upon the expiration of a year marked by almost unexampled prostration of the trade and commerce of the country, and consequent distress amongst the working classes,” he can produce “returns which will bear advantageous comparison with those of previous years.” A table given by Capt. Willis shows that the committals for trial and under summary convictions, in the borough of Manchester, for the two *prosperous* years 1844 and 1845, amounted to 10,436; and that for the two years of *distress* which followed, 1847 and 1848, they amounted only to 7,635.

committals to the *sessions* during the *hard times* were 332, while during the *good times* they were 390. The yearly average of *summary* committals during the hard times was 718, during the good times it was 1,249! or, taking all the committals together, 1,051 was the yearly average from 1846 to 1848, and 1,639 the yearly average from 1850 to 1853.* The comparison now made rests on conditions only affected by good and bad times. No social or political agitation interfered with those conditions; no changes in police or in prison discipline influenced the number of apprehensions or of committals; and the ten years now under consideration may therefore be regarded as well calculated to show the true relation which subsists between crime and disorder on the one hand, and good or bad times on the other.

The last of the ten years under consideration—the year ending 1st July, 1854—saw the town of Preston, with its 70,000 inhabitants, suffering from a contest which will leave its disastrous consequences behind for many years.

The Preston strike threw out of work about 18,000 factory hands, to say nothing of other operatives whose employment depended more or less directly on the mills. The results in respect to committals from the town were such as the experience of similar events in past years prepared me to anticipate. On comparing the six months of the strike with the corresponding six months of the previous year, it appeared that the committals to the sessions of youths under 21 rose from 18 to 36; youths committed summarily decreased from 49 to 40. The committals of male adults to the sessions rose from 42 to 52; male adults summarily convicted decreased from 71 to 47. The committals of young females decreased from 30 to 10; the decrease in the committal of older females was from 68 to 40. As a general result, committals of all kinds from Preston during six months of the strike (from 1st November, 1853, to 30th April, 1854) diminished 22·7 per cent. as compared to the corresponding six months of the preceding year; they diminished 32 per cent. as compared to the committals of the six months immediately preceding the strike.

To be taken in connexion with these facts is one which will serve to explain them, viz., the diminished squandering of money in public houses and beer-houses to the amount of 1,000*l.* per week during the time the strike lasted.

In order also to do justice to the good conduct during the strike of those who had been misled into the deplorable act, it should be remembered that while only eighty-six young persons under 21 years of age were sent to prison, more than 8,500 young persons of the class to which they belonged had been living for more than six months in complete idleness, and in considerable suffering.

The general conclusions deducible from the facts now detailed, appear to be that “bad times” may add a few cases to the sessions

* During the four prosperous years the committals were much more affected by Irish immigrants than during the three years of distress. Putting the Irish out of the question for both periods, and taking sessions and summary cases together, the discrepancy remains very striking, viz., average of three bad years 946, of four good years 1,346.

calendars, and that "good times" greatly aggravate summary convictions; that the increase to the sessions consists of the young and thoughtless, who, when thrown into idleness, are liable to lapse into dishonesty; and that the increase of summary cases arises from the intemperance which high wages encourage among the ignorant and sensual.

In my report for the prosperous year 1845, it was shown "that when in 1842-3 the operative was suffering most severely from want of employment, intoxication, as a cause of crime, was, compared to other causes, less than 17 per cent.; while now (1845) that labour and skill are in the greatest demand, and wages are unusually high, the criminality attributable to this debasing propensity has swollen to 41 per cent." In a previous report (1843), in noticing the small proportion of females committed during the distress of 1842-3 (1 female to 6.6 males), it was suggested that "in it we find what strengthens the opinion as to the inadequacy of poverty alone to account for the amount of crime. Every one conversant with the condition and habits of the poor knows that when distress falls upon their families it is the mothers who feel it most poignantly. Too often they and their children are wanting necessary food while their husbands are spending the last sixpence in the alehouse. Too often, when the husband is on the tramp seeking employ, or still worse, when he has entirely deserted his family, the poor wife is left to resist as she may the temptation to obtain by dishonesty the bread for which her children are crying. When, further, the large amount of destitute widowhood is taken into the account, the conclusion appears to me irresistible, that '*want and distress, uncombined with dissolute habits, are rarely operative in producing crime.*'"

I venture to hope that the truths which I have now endeavoured to establish will not be regarded as the barren results of a mere statistical investigation, but as a matter of deep moral and social significance.

In this country, and at this time, it ought to be felt as a grief and a reproach demanding anxious attention, that the material prosperity of the industrious classes should be so constantly accompanied by the moral degradation of a large portion of them. In the tendencies and habits of many of our artizans and labourers, there must be something deeply wrong when "*what should have been for their wealth is to them an occasion of falling.*" The deplorable truth is, that the wide want of moral and religious instruction, and of really useful knowledge, debars MILLIONS of our working population from the true use and enjoyment of the advantages within their power. The money earned by their toil and skill, instead of being employed in accordance with the dictates of prudence and the requirements of civilized life, is dissipated in rioting and drunkenness, and the results are misery, crime, and the jail.

MISCELLANEA.

RAGS AND PAPER.

[Communicated by J. B. SHARP, Esq.]

An Account of RAGS Imported into the United Kingdom, Exported from the United Kingdom, and left for Home Consumption, from 1801 to 1853; stated in Five Decennial Periods, terminating respectively in 1810, 1820, 1830, 1840, and 1850, and in the Three Years 1851 to 1853.

Years.	Import.	Export.	Left for Home Consumption.
	Tons.	Tons.	Tons.
1801 to 1810	30,696	11	30,685
1811 „ 1820	38,107	1,649	36,458
1821 „ 1830	80,088	786	79,302
1831 „ 1840	95,203	2,138	93,065
1841 „ 1850	74,463	2,950	71,513
1851 „ 1853	27,997	4,762	23,235
Total Quantities imported, exported, and remaining for Home Consumption in 53 years	346,554	12,296*	334,258
General Annual Average of import, export, and remaining for Home Consumption in 53 years ..	6,539	232	6,307

* Of this quantity of 12,296 tons exported, the official accounts, from which these details are derived, show that 10,146 tons were British and Irish rags, and 2,150 tons were foreign rags re-exported.

An Account of the Quantity of PAPER made, and the Gross Amount of Duty paid thereon, in the Five Years 1830 to 1834, preceding the Reduction of the Duty; and in the last Five Years 1849 to 1853.

Year.	Pounds made.	Gross Amount of Duty.	Year.	Pounds made.	Gross Amount of Duty.
		£			£
1830....	68,378,566	747,114	1849....	132,132,657	859,575
1831....	66,974,186	728,862	1850....	141,032,473	915,121
1832....	69,804,443	763,104	1851....	150,903,543	993,592
1833....	73,614,997	804,513	1852....	154,469,211	1,000,630
1834....	76,138,466	833,822	1853....	177,633,009	1,148,116
Total in five years	351,940,658	3,877,415	Total in five years	756,170,893	4,917,034
Average per annum ..	70,988,131	775,483	Average per annum ..	151,234,178	983,407

The total quantity of material of all kinds consumed in the manufacture of paper ranges between 110,000 and 120,000 tons per annum, at the present rate of production; and the whole of our import of such material, as shown in a preceding table, only amounts to about 6 per cent. of the entire consumption.

**THE MARRIAGES, BIRTHS, AND DEATHS,
REGISTERED IN THE DIVISIONS, COUNTIES, AND DISTRICTS OF ENGLAND.**

*The Marriages for the Quarter ended June, 1854, and the Births and
Deaths for the Quarter ended September, 1854,*

AS PUBLISHED BY AUTHORITY OF THE REGISTRAR-GENERAL.

This return comprises the births and deaths registered by 2,196 registrars in all the districts of England during the Summer quarter ended September 30th, 1854; and the marriages in 12,066 churches or chapels, about 3,539 registered places of worship unconnected with the Established Church, and 627 superintendent registrars' offices, in the quarter that ended June 30th, 1854.

The general result of the returns is of a mixed character. The marriages in the spring quarter exceeded the average proportion. The births were also more than usually numerous in the summer quarter ended September 30th. And in the summer quarter also the mortality was high in consequence of the prevalence of the epidemic of cholera, chiefly in dense, ill-drained towns, supplied with impure waters.

MARRIAGES.—40,389 marriages were celebrated in the quarter ended June 30th. The number only exceeds by 54 the marriages in the corresponding quarter of 1853; still after allowing for increase of population the marriages have exceeded the average of the ten previous years. The marriages decreased in some of the South Midland counties, and increased in Essex, Suffolk, Norfolk, Wilts, Cornwall, Staffordshire, Worcestershire, in the North Riding of York, in Durham, and in Northumberland.

BIRTHS.—154,735 births were registered in the quarter ended September 30th. This number, which exceeds by 7,154 the number of births in the summer quarter of 1853, is the largest number ever registered in the summer quarter; and allowing for increase of population, the rate of births, 3·294 per cent. per annum, exceeds the

*Marriages, Births, and Deaths, returned in the Years 1842-54 and in the Quarters
of those Years.*

YEARS.....	1842	1843	1844	1845	1846	1847	1848	1849	1850	1851*	1852	1853	1854
Marriages	118825	123818	132249	143743	145664	135845	138230	141883	152744	154206	158439	164021	...
Births	517739	527325	540763	543521	572625	539965	563059	578159	593422	615865	624171	612341	...
Deaths	349519	346445	356933	349366	390315	423304	399833	40839	368995	395174	407826	421775	...
MARRIAGES.													
Quarters ended the last day of													
March	25860	25285	26387	29551	31417	27480	28398	28429	30567	32724	32933	35014	33144
June	30018	31113	34268	35300	37111	35197	34721	35844	39204	38635	40607	40335	40389
September	27288	28847	31675	35003	35670	32439	32995	33874	37636	37316	38291	39766	...
December	35629	38573	39919	43889	42066	40729	42116	43736	45337	45531	47208	48886	...
BIRTHS.													
March	135615	136837	143578	143080	145108	146453	139736	153772	144551	157286	161776	161598	160892
June	134096	131279	136941	136853	149450	139072	149760	153693	155865	159073	159136	158718	172420
September	123296	128161	130078	133369	138718	127173	140359	135223	146911	150594	151193	147581	154735
December	124732	131048	130166	131219	139349	127267	133204	135471	146095	148912	152066	144444	...
DEATHS.													
March	96314	94926	101024	104664	89484	119672	120032	105870	98430	105306	106682	118241	111970
June	86538	87234	85337	89149	90231	106718	99727	102153	92871	99468	100813	107861	102666
September	82339	76792	79708	74872	101663	93435	87638	135227	85849	91381	100885	92332	113939
December	81328	87493	90864	80651	108937	103479	92436	97589	91845	99019	99946	103341	...

* The numbers up to 1851 have appeared in the Annual Reports.

average (3·179). The chief increase of births has been in the counties of Essex, Suffolk, Norfolk, Wilts, Somerset, Stafford, Worcester, Lincoln, Durham, Northumberland, Monmouthshire, and South Wales.

INCREASE OF POPULATION.—As 154,735 children were born, and 113,939 persons died in the summer quarter, the natural increase of population in the quarter was 40,796. The increase is below the average. 91,900 emigrants sailed, in the quarter, from the ports of the United Kingdom at which there are Government Emigration Agents; 12,504 sailed from the port of London, 6,201 from Plymouth, 4,134 from Southampton, and 58,227 from Liverpool, making 81,066 from England; 3,538 sailed from Scotland, 7,296 from Ireland.* A large proportion of the emigrants that sail from English ports are from Ireland, others are from Germany.

THE PRICES OF PROVISIONS AND THE WEATHER.—The price of some of the chief articles of food was higher, of others lower, than it was in the quarter ended September 30th, 1853. Thus wheat, which sold at 51s. 10d. in the summer quarter of 1853, was 63s. 10d. in the last summer quarter; in the same quarters beef was 5½d. and 5½d. a pound; and mutton was 6½d. and 6d. a pound. Potatoes are fortunately cheaper than they were last year. The meteorological observers state that the hay harvest has been late, and generally a poor crop; that the grain crops are

England:*—*Annual Rate per cent. of Marriage, Birth, and Death, during the Years 1844-54, and the Quarters of those Years.*

Estimated Population of England in thousands in the middle of each Year.....	16520	16721	16925	17132	17340	17552	17766	17983	18205	18402	...	18617
YEARS	1844	1845	1846	1847	1848	1849	1850	1851	1852	1853	Mean, 1844-53	1854
Marriages.....	·801	·860	·861	·793	·798	·809	·860	·858	·870	·891	·840	...
Births	3·274	3·251	3·385	3·153	3·249	3·296	3·343	3·425	3·428	3·328	3·313	...
Deaths	2·161	2·090	2·307	2·472	2·307	2·513	2·078	2·198	2·241	2·292	2·266	...
MARRIAGES.												
Quarters ended the last day of												
March	·644	·721	·757	·655	·661	·661	·702	·742	·729	·775	·705	·726
June	·834	·849	·882	·826	·805	·822	·888	·864	·883	·880	·853	·872
September	·760	·830	·822	·751	·755	·766	·840	·822	·833	·856	·804	...
December	·955	1·038	·983	·940	·961	·986	1·010	1·000	1·024	1·050	·995	...
BIRTHS.												
March	3·507	3·491	3·498	3·488	3·252	3·575	3·321	3·567	3·581	3·575	3·486	3·523
June	3·334	3·291	3·551	3·265	3·474	3·523	3·530	3·557	3·512	3·464	3·450	3·722
September	3·123	3·140	3·251	2·945	3·211	3·056	3·281	3·317	3·290	3·177	3·179	3·294
December	3·115	3·103	3·256	2·938	3·038	3·053	3·253	3·270	3·300	3·101	3·143	...
DEATHS.												
March	2·467	2·554	2·157	2·850	2·794	2·462	2·261	2·388	2·362	2·616	2·491	2·452
June	2·077	2·144	2·144	2·506	2·313	2·341	2·107	2·224	2·225	2·354	2·244	2·216
September	1·913	1·776	2·382	2·163	2·005	3·057	1·917	2·013	2·185	1·988	2·140	2·425
December	2·175	1·908	2·545	2·389	2·108	2·199	2·045	2·174	2·169	2·219	2·193	...

* The table may be read thus, without reference to the decimal points:—In the year 1848, to 100,000 of the population of England there were 798 marriages, 3,249 births, and 2,307 deaths registered. The annual rates of marriage in each of the four quarters were ·661, ·805, ·755, and ·961 per cent.; the rates of death 2·794, 2·313, 2·005, and 2·108 per cent. In reading the population on the first line add three ciphers (000). The three months January, February, March, contain 90, in leap year 91 days; the three months April, May, June, 91 days; each of the two last quarters of the year 92 days. For this inequality a correction has been made in the calculation.

* From a Return with which the Registrar-General has been favoured by the Emigration Commissioners.

good everywhere, and well got in; that potatoes are abundant; apples and pears scarce, turnips small. There has been a deficiency of rain, which, during the nine months of the year, amounts only to two-thirds of the average; the air has been less in motion and is less humid than usual; it has been of the average temperature. Mr. Glashier has ably described all the meteorological phenomena observed.

STATE OF THE PUBLIC HEALTH.—113,939 deaths have been registered during the summer quarter, or 21,607 more deaths than were registered in the summer

The Average Prices of Consols, of Wheat, Meat, and Potatoes, also the Average Quantity of Wheat sold and imported Weekly, in each of the nine Quarters ended September 30th, 1854.

Quarters ended	Average Price of Consols (for Money.)	Average Price of Wheat per Quarter in England and Wales.	Wheat sold in the 290 Cities and Towns in England and Wales making Returns.	Wheat and Wheat Flour entered for Home Consumption at Chief Ports of Great Britain.	Average Prices of Meat per lb. at Leadenhall and Newgate Markets (by the Carcase).		Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.
			Average Number of Quarters weekly.		Beef.	Mutton.	
1852 Sept. 30.	£ 100	41s. 2d.	78,712	67,912	3 $\frac{1}{4}$ d.—5d. Mean 4 $\frac{1}{2}$ d.	4d.—6d. Mean 5d.	80s.—100s. Mean 90s.
Dec. 31.	100 $\frac{5}{8}$	40s. 5d.	111,224	72,870	3d.—5d. Mean 4d.	4 $\frac{1}{2}$ d.—6 $\frac{1}{2}$ d. Mean 5 $\frac{1}{2}$ d.	90s.—120s. Mean 105s.
1853 Mar. 31.	99 $\frac{5}{8}$	45s. 7d.	95,115	63,530	3 $\frac{3}{4}$ d.—5 $\frac{1}{4}$ d. Mean 4 $\frac{1}{2}$ d.	4 $\frac{3}{4}$ d.—6 $\frac{3}{4}$ d. Mean 5 $\frac{3}{4}$ d.	110s.—145s. Mean 127s. 6d.
June 30.	100 $\frac{1}{4}$	44s. 6d.	84,559	82,623	4d.—5 $\frac{3}{4}$ d. Mean 4 $\frac{7}{8}$ d.	5d.—6 $\frac{3}{4}$ d. Mean 5 $\frac{3}{4}$ d.	110s.—145s. Mean 127s. 6d.
Sept. 30.	97	51s. 10d.	86,087	120,020	4 $\frac{1}{2}$ d.—6d. Mean 5 $\frac{1}{2}$ d.	5d.—7 $\frac{1}{4}$ d. Mean 6 $\frac{1}{2}$ d.	110s.—125s. Mean 117s. 6d.
Dec. 31.	93 $\frac{5}{8}$	69s. 10d.	79,002	91,627	4d.—6d. Mean 5d.	4 $\frac{1}{2}$ d.—7d. Mean 5 $\frac{3}{8}$ d.	135s.—165s. Mean 150s.
1854 Mar. 31.	91	79s. 6d.	60,022	103,519	4 $\frac{1}{2}$ d.—6 $\frac{1}{2}$ d. Mean 5 $\frac{1}{2}$ d.	4 $\frac{1}{2}$ d.—7d. Mean 5 $\frac{3}{4}$ d.	120s.—160s. Mean 140s.
June 30.	88 $\frac{5}{8}$	78s. 4d.	55,842	103,331	4 $\frac{1}{2}$ d.—6 $\frac{1}{2}$ d. Mean 5 $\frac{3}{8}$ d.	4 $\frac{3}{4}$ d.—6 $\frac{3}{4}$ d. Mean 5 $\frac{3}{4}$ d.	137s.—172s. Mean 155s.
Sept. 30.	93 $\frac{7}{8}$	63s. 10d.	56,389	48,135	4 $\frac{3}{4}$ d.—6 $\frac{3}{4}$ d. Mean 5 $\frac{3}{4}$ d.	5d.—7d. Mean 6d.	Regents. 75s.—85s. Mean 80s.
Col.	1	2	3	4	5	6	7

Note.—The total number of quarters of wheat sold in England and Wales for the 13 weeks ended September 30th, 1852, 1,023,251; for the 13 weeks ended December 31st, 1854, 1,445,906; for the 13 weeks ended March 31st, 1853, 1,236,493; for the 13 weeks ended June 30th, 1853, 1,099,261; for the 13 weeks ended September 30th, 1853, 1,119,128; for the 14 weeks ended December 31st, 1853, 1,106,027; for the 13 weeks ended March 31st, 1854, 780,282; for the 13 weeks ended June 30th, 1854, 725,946; and for the 13 weeks ended September 30th, 1854, 733,059. The total number of quarters entered for Home Consumption was, respectively, 882,850; 947,310; 825,886; 1,074,095; 1,560,255; 1,191,149; 1,345,743; 1,343,305; and 625,755.

Columns 2, 3, and 4 are compiled from the official returns published in the London Gazette; columns 1, 5, 6, and 7 are derived from the London market returns published in the Economist.

quarter of the preceding year. The mortality in the last quarter was at the rate of 2·425 per cent. annually, or ·285 more than the average 2·140. The rate of mortality was raised from 2·553 to 3·121, or nearly one-fourth part, in the districts comprising the chief towns; from 1·848 to 1·927, or nearly one-twentieth part, in the small towns and in the country. The fatal epidemic cholera, of which a detailed account appears in p. 86, is chargeable with this excess in the rate of mortality. Thus when epidemics prevail, as well as in ordinary times, the towns in their present defective sanitary condition are the chief sufferers. During the summer quarter, in the same population, to every three deaths in the country there were four deaths in the towns.

In London the deaths in the 13 weeks ended September 30th amounted to 24,870, or to 11,952 more than the deaths (12,918) in the summer quarter of 1853. This excess exceeds slightly the deaths from epidemic cholera (9,708), and diarrhoea (2,069), which make 11,777 in the aggregate. In the summer quarter of 1849 the deaths from cholera were 12,847, from diarrhoea 2,457, or from both causes 15,304; and the deaths from all causes were 27,100. Small-pox and erysipelas prevailed to some extent. Scarlatina was epidemic, and was fatal to 978 persons, typhus or fever to 678, ague to 11. In childbirth 96 mothers died; 38 in metria or childbirth fever, and 58 in other ways. Hydrophobia, which had been fatal in London before to only four persons in eight years, was, in three months, the cause of death in four instances. It is not known whether the dryness of the season had any influence in producing this result. Epilepsy was fatal in an unusual number of cases (97). 609 deaths were referred to pneumonia, 538 to bronchitis, 1,664 to consumption. The deaths of 18 persons were directly referred to intemperance, 8 to privation, 45 to delirium tremens, 13 to poison; burns and scalds were less fatal (23) than usual; 104 persons were drowned, 177 were killed by fractures and contusions of various kinds; 28 by wounds.

Deaths in the Summer Quarters.

	1844	1845	1846	1847	1848	1849	1850	1851	1852	1853	Total 1844-53	1854
In 117 Districts, comprising the chief towns...	38933	36139	51405	49479	43445	78159	42777	46061	51635	47615	485678	63107
In 508 Districts, comprising chiefly small towns and country parishes	40775	38733	50258	43956	44193	57068	43072	45320	48750	44687	456812	50832
Total.....	79708	74872	101663	93435	87638	135227	85849	91381	100385	92332	942490	113939

Population, Deaths, and Mortality per cent. in the Summer Quarters, 1844-54.

	Population Enumerated.		Deaths in 10 Summer Quarters, 1844-53.	Annual Rate of Mortality of 10 Summer Quarters, 1844-53.	Annual Rate of Mortality in the Summer Quarter 1854.
	June 6-7th, 1841.	March 31st, 1851.			
In 117 Districts, comprising the chief towns	6,612,958	7,886,473	485,678	2·553	3·121
In 508 Districts, comprising chiefly small towns and country parishes	9,301,190	10,041,136	456,812	1·848	1·927
All England	15,914,148	17,927,609	942,490	2·140	2·425

MORTALITY OF THE METROPOLIS.

A Table of the Deaths in London from all Causes, Registered in the September Quarters of the Four Years, 1851-54.

CAUSES OF DEATH.	Quarters ended Sept.,				CAUSES OF DEATH.	Quarters ended Sept.,			
	1851	1852	1853	1854		1851	1852	1853	1854
ALL CAUSES	12,887	13,111	12,918	24,870	III. Scrophula	95	106	121	61
SPECIFIED CAUSES	12,837	13,007	12,773	24,718	Tuberc Mesenterica	251	279	273	325
I. Zymotic Diseases	3,854	3,723	3,436	14,033	Phthisis or Con- sumption	1,083	1,072	1,745	1,694
<i>Sporadic Diseases:</i>					Hydrocephalus	343	406	353	411
II. Dropsy, Cancer, and other Diseases of uncertain or vari- able Seat	571	555	575	567	IV. Cephalitis	132	130	127	181
III. Tubercular Diseases	2,377	2,463	2,495	2,491	Apoplexy	203	283	281	278
IV. Diseases of the Brain, Spinal Marrow, Nerves, and Senses	1,394	1,423	1,373	1,600	Paralysis	239	234	244	310
V. Diseases of the Heart and Blood Vessels	418	464	465	460	Delirium Tremens	35	23	37	45
VI. Diseases of the Lungs and of the other Organs of Respi- ration	1,163	1,148	1,246	1,374	Chorea	2	2	3	4
VII. Diseases of the Stom- ach, Liver, and other Organs of Digestion	803	846	815	847	Tetanus	77	75	68	97
VIII. Diseases of the Kid- neys, &c.	131	124	107	174	Insanity	33	27	25	28
IX. Childbirth, Diseases of the Uterus, &c.	119	108	113	111	Convulsions	444	504	463	497
X. Rheumatism, Dis- eases of the Bones, Joints, &c.	94	119	80	107	Disease of Brain, &c.	138	137	122	165
XI. Diseases of the Skin, Cellular Tissue, &c.	20	26	26	38	V. Pericarditis	27	20	15	25
XII. Malformations	37	43	40	39	Aneurism	21	14	23	14
XIII. Premature Birth and Debility	406	415	396	438	Disease of Heart, &c.	370	430	427	469
XIV. Atrophy	416	498	428	605	VI. Laryngitis	38	31	26	43
XV. Age	592	510	429	529	Bronchitis	400	382	523	538
XVI. Sudden*	85	71	76	134	Pleurisy	33	31	31	32
XVII. Violence, Privation, Cold, and Intem- perance	447	556	503	553	Pneumonia	478	544	515	600
					Asthma	66	71	72	70
I. Small Pox	243	231	42	142	Disease of Lungs, &c.	89	89	60	82
Measles	260	129	226	210	VII. Teething	132	133	128	185
Scarlatina	201	668	397	978	Quincy	14	17	9	16
Hooping Cough	360	211	423	332	Gastritis	34	22	24	17
Croup	40	71	72	97	Enteritis	114	131	80	92
Thrush	74	72	68	63	Peritonitis	44	47	55	43
Diarrhoea	1,450	1,433	1,232	2,060	Ascites	35	35	32	23
Dysentery	67	58	51	70	Ulceration of Intes- tines, &c.	32	33	33	35
Cholera	188	127	137	9,708	Hernia	33	23	31	33
Influenza	7	3	6	8	Hæmorrhoids	33	39	40	53
Purpura and Scurvy	14	11	12	13	Intussusception	12	11	12	11
Ague	5	1	8	11	Stricture (of the In- testinal Canal)	19	9	19	18
Remittent Fever	38	21	20	25	Disease of Stomach, &c.	82	60	71	68
Infantile Fever	17	10	13	9	Disease of Pancreas	1	...	...	5
Typhus	627	520	585	678	Hepatitis	46	60	59	51
Metria, or Puerperal Fever, <i>see</i> Child- birth	31	26	23	38	Jaundice	41	50	47	62
Rheumatic Fever, <i>see</i> Rheumatism	19	12	15	18	Disease of Liver	130	164	189	129
Erysipelas	76	54	80	109	Disease of Spleen	2	2	4	6
Syphilis	23	24	41	47	VIII. Nephritis	7	6	8	17
Noma or Cancer, <i>see</i> Mortification	9	5	2	4	Nephria (or Bright's Disease)	25	25	40	48
Hydrophobia .....	...	...	...	4	Ischuria	1	2	2	2
II. Hemorrhage	48	49	50	47	Diabetes	10	8	16	14
Dropsy	177	183	185	214	Stone	6	5	11	11
Abscess	23	27	36	32	Cystitis	5	6	13	11
Ulcer	10	10	6	7	Stricture of Urethra	11	13	18	12
Fistula	7	4	3	3	Disease of Kidneys, &c.	66	59	83	64
Mortification	47	35	39	30	IX. Parametria	1	6	1	1
Cancer	245	235	245	226	Ovarian Dropsy	15	14	10	15
Gout	14	12	11	8	Childbirth, <i>see</i> Metria	55	55	67	58
					Disease of Uterus, &c.	48	33	35	37
					X. Arthritis	46	...	2	3
					Rheumatism	40	74	33	54
					Disease of Joints, &c.	46	45	45	50
					XI. Carbuncle	4	15	17	19
					Phlegmon	6	2	3	6
					Disease of Skin, &c.	10	9	6	13
					XVII. Intemperance	13	21	21	18
					Privation	3	1	3	8
					Want of Breast Milk, <i>see</i> Privation and Atrophy	67	101	99	117
					Neglect .....	...	...	4	...
					Cold, <i>see</i> Privation .....	...	2	...	...
					Poison	10	23	15	13
					Burns and Scalds	35	34	38	23
					Hanging, &c.	43	65	48	44
					Drowning	89	114	93	104
					Fractures and Con- tusions	156	162	141	177
					Wounds	21	20	26	28
					Other Violence	9	13	20	21
					Causes not specified	50	104	145	152

NOTE.—In the thirteen weeks of 1854, which began July 2nd and ended September 30th, and which constitute the September quarter in the Weekly Tables of Mortality, 24,870 deaths were registered. In 92 days, viz., the quarter ended September 30th, 24,900 deaths were registered.

* Under the head of *sudden deaths* are classed not only deaths described as sudden, of which the cause has not been ascertained or stated; but also all deaths returned by the coroner in vague terms, such as "found dead," "natural causes," &c., &c.

The Epidemic Cholera.

The following is a complete return of the number of deaths from cholera and from diarrhoea in England and Wales, for the months of July, August, and September.

The returns have been made from their register books by the registrars.

The deaths by cholera in the three months were 15,587, by diarrhoea 11,135; or 26,722 by the two forms of disease. The epidemic has exhibited less intensity than it did in 1849; and although diarrhoea has been apparently as prevalent, or at least as fatal, the deaths by cholera have been less by 28,234 than the deaths by the same disease in the three summer months of that year. The mortality from cholera and diarrhoea is less by one-half than it was in 1849.

The districts in what was called the London Cholera Field have suffered most severely; and there it is known that though some sanatory improvements have been projected, they have only in a few instances been carried out.

Liverpool has been attacked by the epidemic, but the deaths by cholera in that town and its suburbs (the districts of Liverpool and West Derby) have hitherto been 953; whereas the deaths by cholera in the corresponding period of 1849 were 4,545. Liverpool has a Health Officer; and certain sanatory measures have been carried into effect. The authorities of the town deserve credit for their successful efforts in the improvement of the health of Liverpool.

Deaths by the epidemic cholera have, during the three months, occurred in every county except Herefordshire, Rutlandshire, and Westmorland; but many districts have escaped hitherto, and a few, such as Merthyr Tydfil, have suffered or are still suffering severely.

The diarrhoea, which is so fatal in Birmingham, Manchester, and other districts, where few deaths are referred to cholera, requires investigation; it is undoubtedly, in the majority of instances, a modification of choleraic disease.

Deaths from Cholera and Diarrhoea in England in Three Epidemics.

Months.	1831-32. (Registers did not exist, and the Returns were imperfect.)	1849.	1854.
Deaths from Cholera.			
July	4,816	7,570	324
August	8,875	15,872	5,246
September	5,479	20,379	10,017
Total in three months....	19,170	43,821	15,587
Deaths from Diarrhoea.			
July	?	2,124	1,118
August	?	3,599	3,787
September	?	4,928	6,230
Total in three months....	?	10,651	11,135
Total deaths from cholera and diarrhoea.....	?	54,472	26,722

Deaths in London from Cholera and Diarrhœa in Two Epidemics.

Months.	Cholera in the Year		Diarrhœa in the Year	
	1849.	1854.	1849.	1854.
July	2,555	165	684	220
August	5,368	3,906	993	986
September	5,031	5,637	1,012	863
	12,954	9,708	2,689	2,069

Deaths in Liverpool and West Derby from Cholera and Diarrhœa in Two Epidemics.

Months.	Cholera in the Year		Diarrhœa in the Year	
	1849.	1854.	1849.	1854.
July	1,330	28	256	88
August	1,984	155	306	311
September	1,231	770	249	296
	4,545	953	811	695

On the Meteorology of England and Scotland during the Quarter ended September 30th, 1854. By JAMES GLAISHER, Esq., F.R.S., Sec. of the British Meteorological Society.

The cold period which set in on April 22nd continued till July 19th; the mean daily defect of temperature from July 1st to July 19th exceeded 4° , and from April 22nd to July 19th averaged 3.4° . At the beginning of July the weather was bleak and variable, and the temperature was low; on some days the deficiency exceeded 6° or 7° , and on one the defect amounted to 10° . From July 20th to the end of the month the temperature was in excess, on the 25th to the amount of 12° , and for the period it averaged 4° daily. From August 1st to 18th the variations of temperature were considerable and frequent; a few warm days being succeeded by a few cold days, and followed by a few warm days again. On August 19th a generally fine and warm period set in, and continued till the end of the quarter, the mean daily excess of temperature for this period was 2.6° .

The temperature of the air for the quarter differs but little from the average. The range of temperature day by day has been unusually large, particularly in September. The temperature of the dew point has been low throughout the quarter, and therefore there has been less than the usual amount of water mixed with the air, and the atmosphere has, consequently, been less humid than usual, particularly in August and September.

The mean temperature of the air at Greenwich for the quarter ending August, constituting the three summer months, was $58^{\circ}.0$, being $1^{\circ}.9$ below the average of 80 years.

1854. Months.		Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
		Air.			Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames.				
		Mean.	Diff. from Average of 80 Years.	Diff. from Average of 13 Years.	Mean.	Diff. from Average of 13 Years.	Mean.	Diff. from Average of 13 Years.	Mean.	Diff. from Average of 13 Years.		Mean.	Diff. from Average of 13 Years.	Mean.	Diff. from Average of 13 Years.
July	60·3	-1·0	-1·5	56·2	-1·2	53·6	-0·7	21·6	+4·1	64·1	·413	-.025	4·6	-0·3	
Aug.	60·9	+0·4	-0·2	56·5	-0·9	53·3	-1·2	20·7	+2·7	64·1	·416	-.021	4·7	-0·2	
Sept.	58·1	+1·8	+1·3	53·9	0·0	50·4	-0·9	25·7	+8·4	62·9	·375	-.017	4·3	-0·1	
Mean.....	59·8	+0·4	-0·1	55·6	-0·7	52·4	-0·9	22·7	+5·1	63·7	·401	-.021	4·5	-0·2	

1854. Months.		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Hori- zontal Move- ment of the Air.	Reading of Thermometer on Grass.				
		Mean.	Diff. from Average of 13 Years.	Mean.	Diff. from Average of 13 Years.	Mean.	Diff. from Average of 13 Years.	Amnt.	Diff. from Average of 39 Years.		Number of Nights it was			Low- est Read- ing at Night.	High- est Read- ing at Night.
											At or below 40°.	Be- tween 40° and 50°.	Above 50°.		
July	·783	-.005	In. 29·807	+·017	Gr. 525	+ 1	In. 1·7	-1·0	Miles. 75	1	24	6	34·5	53·5	
Aug.	·771	-.039	29·889	+·104	526	+ 2	2·9	+0·4	79	7	18	6	30·2	57·8	
Sept.	·770	-.057	30·031	+·199	532	+ 2	0·7	-1·8	83	19	6	5	31·0	58·4	
Mean.....	·775	-.034	29·909	+·107	528	+ 2	Sum 5·3	Sum -2·4	79	Sum 27	Sum 48	Sum 17	30·2	58·4	

Note.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

The deficiency of rain which has prevailed from the beginning of the year has continued during the quarter. The fall up to the end of September is only two-thirds of the average for the first nine months of the year.

The wind has been mostly from the south-west, more steadily in the northern than in the southern parts of the country. Everywhere it has been light, and the air has been in less motion than usual.

The electricity of the atmosphere has been, for the most part, very weak, and almost always positive.

Thunderstorms have been less frequent than usual, and there was none of marked character. Scarcely any hail has fallen. Fogs began to be prevalent at the end of August. There has been a marked absence of cumuli and cirrostratus clouds, and at times the atmosphere has been peculiarly transparent.

The hay harvest was very late, and the crop a poor one generally. In the northern parts of the country hay was standing in the fields when the corn was ready to cart off.

Wheat was in flower about the 2nd of July, and was cut in Cornwall and Devonshire about the 9th of August; in latitude 52° about the 10th; in latitude 53° the 13th and 14th; in 53½° the 15th; from 54° to 55°, between 16th and 21st; and in the neighbourhood of Dunino, whose latitude is 56° 34', on the 26th.

The grain crops are good everywhere, and well got in. Apples and pears are scarce. Turnips are small from the drought. Potatoes are abundant. The blight in fruit showed itself in Scotland about the 16th July, and the loss there from disease has been great. In many places no loss has been sustained this year from the potato disease.

Meteorological Table, Quarter ended September 30th, 1854.

NAMES OF STATIONS.	Mean Pressure of Dry Air reduced to the Level of the Sea.	Mean Temperature of the Air.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Mean Daily Range of Temperature.	Mean Monthly Temperature.	Range of Temperature in the Quarter.	WIND.		Mean Amount of Cloud.	RAIN.		Mean Degree of Humidity.
								Mean estimated Strength.	General Direction.		Number of Days on which it fell.	Amount collected.	
Jersey	in. 29·677	° 61·0	° 85·0	° 51·0	° 11·0	° 27·0	° 34·0	° 1·4	s.w.	3·0	20	in. 3·1	0·832
Falmouth .....	....	° 61·0	° 83·0	° 41·0	° 16·9	° 38·3	° 42·0	° 1·6	E. & S.W.	5·8	33	3·7	...
Truro .....	....	° 60·2	° 84·0	° 39·0	° 16·6	° 40·0	° 45·0	° 1·4	Var.	5·8	34	3·8	0·824
Exeter	29·692	° 60·2	° 83·0	° 41·0	° 18·1	° 36·6	° 42·0	° 2·1	Var.	2·9	34	4·8	0·778
Newport	29·700	° 61·4	° 91·3	° 39·2	° 22·8	° 47·1	° 52·1	° 3·0	Var.	5·8	31	3·5	0·721
Worthing	29·687	° 59·4	° 80·5	° 43·8	° 12·0	° 27·9	° 36·7	° 0·9	s.w.	4·2	24	3·5	0·794
Clifton	29·679	° 58·7	° 79·8	° 38·0	° 17·8	° 37·9	° 41·8	° 0·8	s.w. & w.	4·7	39	4·9	0·821
Royal Observatory	29·686	° 59·8	° 88·7	° 37·9	° 22·7	° 43·4	° 50·8	....	S.W. & N.E.	6·1	36	5·3	0·775
Oxford	29·694	° 58·9	° 84·3	° 38·0	° 19·2	° 38·9	° 46·3	° 1·4	W.S.W.	6·1	35	3·7	0·779
Stone	29·621	° 58·5	° 85·4	° 39·0	° 20·1	° 40·9	° 46·4	° 0·7	Var.	5·1	36	3·2	0·803
Royston	29·712	° 59·7	° 87·2	° 39·1	° 19·6	° 43·5	° 48·1	....	Var.	5·7	60	4·1	0·744
Norwich	29·639	° 59·6	° 81·0	° 37·0	° 17·9	° 37·5	° 44·0	° 1·4	Var.	5·7	34	7·5	0·784
Derby .....	....	° 57·4	° 79·0	° 38·0	° 17·9	° 37·0	° 41·0	....	....	....	40	5·4	....
Holkham	29·656	° 58·7	° 82·8	° 40·0	° 16·2	° 34·8	° 42·8	° 1·3	S.W. & W.	5·3	31	8·4	0·800
Nottingham	29·665	° 58·6	° 86·0	° 33·5	° 21·1	° 44·0	° 52·5	° 0·4	N.W., W., & S.W.	5·8	43	4·4	0·823
Gainsborough	29·649	° 59·3	° 83·0	° 40·9	° 15·7	° 36·3	° 43·0	° 0·2	S.W.	4·3	25	3·6	0·769
Warrington	29·638	° 57·7	° 79·7	° 38·2	° 16·7	° 37·5	° 40·5	° 4·4	S.S.W.	5·0	43	6·8	0·823
Liverpool	29·698	° 59·4	° 76·4	° 48·6	° 11·3	° 22·8	° 27·8	° 0·9	N.W.	6·7	41	6·0	0·771
Wakefield	29·636	° 58·1	° 84·2	° 33·7	° 21·0	° 45·6	° 50·5	° 1·6	S.W. & W.	5·8	44	5·1	0·810
Leeds	29·647	° 59·1	° 85·0	° 39·0	° 14·6	° 41·3	° 46·0	° 1·3	S.W.	6·7	37	3·4	0·751
York	29·618	° 56·8	° 79·0	° 28·0	° 15·2	° 40·2	° 51·0	....	S.W. & W.	....	30	4·6	0·826
Whitehaven	29·579	° 57·3	° 76·0	° 44·0	° 13·5	° 28·5	° 32·0	° 1·8	S.W.	....	40	9·3	0·893
North Shields	29·722	° 56·0	° 75·8	° 42·0	° 12·1	° 30·7	° 33·8	° 2·3	Var.	5·3	53	8·7	0·894
Dunino	29·636	° 57·3	° 74·0	° 37·0	° 14·0	° 30·7	° 37·0	° 1·9	S.W.	4·0	26	3·7	0·810
Arbroath	29·674	° 56·7	° 78·0	° 36·0	° 18·7	° 37·3	° 42·0	° 0·9	S.W. & W.	6·3	34	4·1	0·784

REVENUE.

An Abstract of the Net Produce of the Revenue of the United Kingdom in the Years and Quarters ended 5th January, 1854 and 1855; showing the Increase or Decrease thereof.—(Continued from page 369, vol. xvii.)

Sources of Revenue.	Years ended 5th January.			
	1854.	1855.	Increase.	Decrease.
	£	£	£	£
Customs.....	20,902,734	20,777,713	....	125,021
Excise	15,337,724	16,129,844	792,120	....
Stamps	6,975,416	7,078,006	102,590	....
Taxes.....	3,153,868	3,040,548	....	113,320
Property Tax	5,588,172	7,456,025	1,867,853	....
Post Office.....	1,104,000	1,288,234	184,234	....
Crown Lands.....	402,888	271,572	....	131,316
Miscellaneous	1,066,352	780,568	....	285,784
Totals.....	54,531,154	56,822,510	2,946,797	655,441
			Net Increase £2,291,356	

Sources of Revenue.	Quarters ended 5th January.			
	1854.	1855.	Increase.	Decrease.
	£	£	£	£
Customs	4,882,292	5,466,364	584,072	....
Excise	3,934,688	4,537,640	602,952	....
Stamps	1,639,578	1,719,017	79,439	....
Taxes.....	1,402,690	1,288,632	....	114,058
Property Tax.....	435,558	919,490	483,932	....
Post Office.....	335,000	283,234	....	51,766
Crown Lands.....	80,000	80,000	....	....
Miscellaneous	307,804	163,800	....	144,004
Totals	13,017,610	14,458,177	1,750,395	309,828
			Net Increase £1,440,567	

Increase and Decrease of the Revenue in the Nine Months of the Financial Year, from the 5th of April, 1854, to the 5th of January, 1855, as compared with the corresponding periods of the preceding year.

Increase.—Customs, 74,665*l.*; Excise, 866,294*l.*; Stamps, 121,187*l.*; Property Tax, 1,338,722*l.*; Post Office, 184,234*l.*—*Total Increase, 2,585,102*l.** *Decrease.*—Taxes, 201,153*l.*, Crown Lands, 124,316*l.*; Miscellaneous, 331,317*l.* *Total Decrease, 656,786*l.** *Net Increase, 1,928,316*l.**

An Account showing the Net Revenue and other Receipts of the Quarter ended the 5th of January, 1855; the Application of the same, and the Charge of the Consolidated Fund for the said Quarter, together with the Surplus or Deficiency upon such Charge.

£	£
Surplus balance beyond the charge of the Consolidated Fund, for the quarter ended October 10th, 1854, viz.:—	
Great Britain	134,363
Ireland	10,597
Balance of amount received for Exchequer Bonds appropriated by Parliament to Supply Services, remaining in the Exchequer on October 10th, 1854	14,458,177
Net Income received in the quarter ended January 5th, 1855, as shown in page 90	1,449,849
Amount received in the quarter ended January 5th, 1855, for Exchequer Bonds issued	655,500
Amount of Exchequer Bills (Supply) issued in the quarter ended January 5th, 1855	425,920
Amount received in the quarter ended January 5th, 1855, in repayment of advances for Public Works, &c.	17,134,406
Balance, being the deficiency upon the charge of the Consolidated Fund in Great Britain, and for which Exchequer Bills (Deficiency) will be issued	1,519,594
Amount applied out of the net income for the quarter ended January 5th, 1855, to redemption of Exchequer Bills (Deficiency) for the quarter ended October 10th, 1854, exclusive of 264,670 <i>l.</i> , the surplus charged to the Sinking Fund for the said quarter, similarly applied	2,195,917
Net amount applied to supply services in the quarter ended January 5th, 1855:—	
Out of the Consolidated Fund	£6,732,748
Out of Exchequer Bonds	1,209,980
Out of Exchequer Bills	655,500
	8,598,228
Charge of the Consolidated Fund for the quarter ended January 5th, 1855, viz.:—	
Interest on the Permanent Debt	5,807,996
Terminable Debt	673,212
Interest on Deficiency Bills	50
The Civil List	100,205
Other charges on Consolidated Fund	367,756
Advances for Public Works, &c.	196,047
	7,145,266
Balance of amount received for Exchequer Bonds appropriated by Parliament to supply services, remaining in the Exchequer on January 5th, 1855	250,466
Surplus Balance beyond the charge of the Consolidated Fund for the quarter ended January 5th, 1855, viz.:—	
Great Britain	464,068
Ireland	
	£18,653,940

CORN.

Average Prices of Corn per Imperial Quarter in England and Wales, during each Week of the Fourth Quarter of 1854; together with the Monthly, Quarterly, and Yearly Average—(Continued from p. 371, vol. xvii.)

[Communicated by H. F. JADIS, Esq., Comptroller of Corn Returns.]

Weeks ended on a Saturday, 1854.	Weekly Average.					
	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
October 7	56 7	29 11	25 6	31 8	44 0	39 3
" 14	57 0	30 6	25 4	31 8	41 4	39 0
" 21	57 6	31 3	25 9	35 2	44 10	40 9
" 28	60 7	32 1	26 6	36 5	45 4	42 8
Average for October	57 11	30 11	25 9	35 2½	44 7½	40 5
November 4	68 0	33 6	27 3	38 5	47 6	41 9
" 11	72 1	35 0	28 7	42 5	48 10	48 2
" 18	72 0	34 7	28 4	41 2	49 2	40 8
" 25	74 7	35 6	29 3	44 11	50 5	49 7
Average for November	71 8	34 7½	28 4	41 8½	48 11¾	48 0
December 2	74 4	35 10	29 0	45 3	50 2	49 4
" 9	73 0	35 2	28 4	46 2	49 5	49 5
" 16	72 3	34 6	28 6	47 4	48 9	48 3
" 23	72 4	33 8	27 4	46 0	47 10	46 11
" 30	73 9	34 1	27 10	47 1	47 3	46 8
Average for December	73 1	34 7½	28 2	46 4	48 8	48 1
Average for the Quarter ..	68 0	33 6	27 6	41 6	47 6	45 8
Average for the Year	72 5	36 0	27 11	45 10	47 3½	45 7½

STOCKS AND SHARES.

Fluctuations in the Stock and Share Markets during the Months of October, November, and December, 1854.—(Continued from p. 372, vol. xvii.)

Stocks and Shares.	Amt. of Share.	Amt. Paid.	Price on the			Highest Price during the Months of			Lowest Price during the Months of		
			2 Oct.	2 Nov.	2 Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.
Consols .....	...	...	95½	94½	93½	95½	94½	95½	94½	90½	65½
Exchequer Bills .....	...	...	6s. 6d. P.	5s. 6d. P.	6s. 6d. P.	9s.	9s.	22s. P.	4s.	1s.	2s. dis.
RAILWAYS.											
Brighton	Stock	100	104	105	93	105	107	110½	103	104	93
Caledonian	"	100	62½	61½	52½	62½	61½	66½	58½	58½	49½
Eastern Counties	"	20	11½	11½	13	11½	11½	13½	11½	11½	10½
Great Northern	"	100	87½	90½	83½	90½	90½	97½	87½	87½	82½
Great Western	"	100	72	71½	82½	72½	71½	84	70½	68½	68½
London & North-Western ..	"	100	102	101½	102½	102½	102½	108½	100½	97½	92
Midland	"	100	70½	69½	61½	70½	71½	72	68½	66½	54½
Lancashire and Yorkshire ..	"	100	72	73½	65½	72½	73½	70	70½	69½	57½
North Staffordshire	"	20	17½	13½	11½	13½	13½	13½	13½	12½	10½
South-Eastern	Stock	100	64½	62½	60½	64½	63	66½	61½	57½	57½
South-Western	"	100	83	81½	77	83½	82½	86	81	79½	72½
York, Newcastle, & Berwick ..	"	100	78	77	63½	78½	77½	77½	75	73	61
York and North Midland ..	"	100	55	54	46½	55½	54½	57½	53	50½	41½
Northern of France											
East Indian	20	20	35	34½	24½	35½	34½	35	34½	33	27½
	20	20	23	22½	23½	23½	23½	23½	23	22½	20½

CURRENCY.

BANK OF ENGLAND.

An Account, pursuant to the Act 7th and 8th Victoria, c. 32, for each Week ended on a Saturday, for the Third Quarter of 1854.—(Continued from p. 237.)

[Compiled from the "Banker's Magazine."]

ISSUE DEPARTMENT.

Date.	Notes Issued.	Notes in hands of Public.	Government Debt.	Other Securities.	Gold Coin and Bullion.	Silver Bullion.
1854.	£	£	£	£	£	£
July 1	27,483,985	20,098,780	11,015,100	2,984,900	13,483,985	...
" 8	27,298,660	20,521,240	11,015,100	2,984,900	13,298,660	...
" 15	27,085,945	20,682,965	11,015,100	2,984,900	13,085,945	...
" 22	26,901,010	20,656,525	11,015,100	2,984,900	12,901,010	...
" 29	26,771,780	20,514,720	11,015,100	2,984,900	12,771,780	...
August 5	26,593,700	20,302,465	11,015,100	2,984,900	12,593,700	...
" 12	26,833,350	20,164,510	11,015,100	2,984,900	12,883,350	...
" 19	27,003,755	20,122,935	11,015,100	2,984,900	13,002,755	...
" 26	26,943,695	20,047,515	11,015,100	2,984,900	12,943,695	...
Sept. 2	26,688,250	19,851,665	11,015,100	2,984,900	12,688,250	...
" 9	26,630,110	19,621,950	11,015,100	2,984,900	12,630,110	...
" 16	26,632,810	19,583,885	11,015,100	2,984,900	12,632,810	...
" 23	26,589,730	19,296,250	11,015,100	2,984,900	12,589,730	...
" 30	26,464,300	19,964,920	11,015,100	2,984,900	12,464,300	...

BANKING DEPARTMENT.

Date.	Proprietors' Capital.	Rest.	Public Deposits.	Other Deposits.	Seven Day and other Bills.	Total Dr.
1854.	£	£	£	£	£	£
July 1	14,553,000	3,229,791	5,315,198	11,119,344	982,681	35,200,014
" 8	14,553,000	3,265,820	4,918,822	12,571,329	1,058,431	36,897,402
" 15	14,553,000	3,309,129	3,207,955	11,655,973	1,120,013	33,816,070
" 22	14,553,000	3,328,582	2,058,785	11,609,399	1,057,234	32,606,950
" 29	14,553,000	3,235,739	2,302,361	11,124,260	1,039,720	32,355,080
August 5	14,553,000	3,429,748	2,347,590	10,609,668	1,056,359	31,996,365
" 12	14,553,000	3,438,416	2,990,274	10,153,899	1,043,799	32,179,388
" 19	14,553,000	3,450,375	3,891,195	10,350,618	1,074,839	33,350,027
" 26	14,553,000	3,395,210	3,974,574	9,975,023	1,060,180	32,957,997
Sept. 2	14,553,000	3,689,563	3,996,427	10,402,859	1,082,899	33,674,748
" 9	14,553,000	3,694,814	4,342,706	9,766,245	1,059,551	33,416,316
" 16	14,553,000	3,703,852	4,983,233	9,780,712	1,023,575	34,046,372
" 23	14,553,000	3,710,358	5,263,572	9,768,357	1,021,395	34,416,682
" 30	14,553,000	3,719,493	5,786,582	9,924,217	1,030,651	35,014,003

Date.	Government Securities.	Other Securities.	Notes.	Gold and Silver Coin.	Total Cr.
1854.	£	£	£	£	£
July 1	10,332,795	16,750,401	7,355,205	731,613	35,200,014
" 8	12,977,237	15,920,198	6,777,420	722,547	36,897,402
" 15	12,470,237	14,234,926	6,402,980	737,927	33,816,070
" 22	11,810,383	13,819,415	6,244,455	732,667	32,606,950
" 29	11,775,383	13,610,093	6,257,060	712,544	32,355,080
August 5	11,360,383	13,638,937	6,291,235	705,810	31,996,365
" 12	10,680,493	14,101,584	6,668,840	728,471	32,179,388
" 19	11,030,873	14,740,797	6,879,820	698,537	33,350,027
" 26	10,969,279	14,400,809	6,896,180	691,729	32,957,997
Sept. 2	10,980,029	15,178,013	6,836,555	680,121	33,674,748
" 9	10,996,955	14,719,492	7,608,160	691,709	33,416,316
" 16	10,996,955	15,353,432	7,019,425	616,560	34,016,372
" 23	10,996,955	15,487,091	7,293,480	639,156	34,416,682
" 30	11,006,210	16,912,843	6,499,380	595,570	35,014,003

CURRENCY.—*Continued.*

COUNTRY BANKS.

Average amount of Promissory Notes in Circulation in England and Wales in each week, ended on a Saturday, for the Third Quarter of 1854.—(Continued from page 288.)

[Compiled from the "Banker's Magazine."]

ENGLAND AND WALES.

Date.	Private Banks.	Joint Stock Banks.	Total.
1854.	£	£	£
July 1.....	3,605,225	2,911,504	6,516,729
„ 8.....	3,638,674	2,925,173	6,563,847
„ 15.....	3,616,687	2,930,234	6,546,921
„ 22.....	3,594,716	2,912,966	6,507,682
„ 29.....	3,549,765	2,860,061	6,409,826
Aug. 5.....	3,520,802	2,829,712	6,350,514
„ 12.....	3,499,235	2,847,759	6,346,994
„ 19.....	3,475,133	2,846,855	6,321,988
„ 26.....	3,481,481	2,852,170	6,333,651
Sept. 2.....	3,484,359	2,868,860	6,353,219
„ 9.....	3,519,473	2,898,599	6,418,072
„ 16.....	3,551,070	2,952,917	6,503,987
„ 23.....	3,607,334	3,002,763	6,610,097
„ 30.....	3,721,714	3,064,952	6,786,666

Fixed Issues—Private Banks, £4,607,455 ; Joint Stock Banks, £3,325,857.

Average amount of Promissory Notes in Circulation in Scotland and Ireland during the Months ended the 8th of July, the 5th of August, and the 2nd of September, 1854.—(Continued from page 288.)

SCOTLAND.

Date.	£5 and above.	Under £5.	Total.
1854.	£	£	£
July 5.....	1,408,585	2,612,272	4,020,857
Aug. 8.....	1,384,162	2,578,413	3,962,575
Sept. 2.....	1,304,628	2,562,808	3,867,436

IRELAND.

Date.	£5 and above.	Under £5.	Total.
1854.	£	£	£
July 5.....	2,777,269	3,024,093	5,801,362
Aug. 8.....	2,806,412	2,807,655	5,614,067
Sept. 2.....	2,729,805	2,847,602	5,577,407

Fixed Issues—Scotland, £3,087,209 ; Ireland, £6,354,494.

CURRENCY.

BANK OF ENGLAND.

An Account, pursuant to the Act 7th and 8th Victoria, c. 32, for each Week ended on a Saturday, for the Fourth Quarter of 1854.

[Compiled from the "Banker's Magazine."]

ISSUE DEPARTMENT.

Date.	Notes Issued.	Notes in hands of Public.	Government Debt.	Other Securities.	Gold Coin and Bullion.	Silver Bullion.
1854.	£	£	£	£	£	£
Oct. 7 ...	26,350,030	19,959,015	11,015,100	2,984,900	12,350,030	...
" 14 ...	26,333,410	20,577,965	11,015,100	2,984,900	12,333,410	...
" 21 ...	26,813,125	20,866,520	11,015,100	2,984,900	12,813,125	...
" 28 ...	27,022,310	20,935,885	11,015,100	2,984,900	13,022,310	...
Nov. 4 ...	26,969,950	20,603,610	11,015,100	2,984,900	12,969,950	...
" 11 ...	26,999,380	20,289,035	11,015,100	2,984,900	12,999,380	...
" 18 ...	26,852,420	19,828,270	11,015,100	2,984,900	12,852,420	...
" 25 ...	27,102,620	19,749,975	11,015,100	2,984,900	13,102,620	...
Dec. 2 ...	27,244,460	19,616,790	11,015,100	2,984,900	13,244,460	...
" 9 ...	27,334,415	19,405,555	11,015,100	2,984,900	13,334,415	...
" 16 ...	27,369,845	19,039,065	11,015,100	2,984,900	13,369,845	...
" 23 ...	27,478,185	19,125,445	11,015,100	2,984,900	13,478,185	...
" 30 ...	27,180,835	19,401,150	11,015,100	2,984,900	13,180,835	...

BANKING DEPARTMENT.

Date.	Proprietors' Capital.	Rest.	Public Deposits.	Other Deposits.	Seven Day and other Bills.	Total Dr.
1854.	£	£	£	£	£	£
Oct. 7 ...	14,553,000	3,728,625	5,766,065	9,598,807	1,059,737	34,706,234
" 14 ...	14,553,000	3,117,968	2,554,622	11,216,564	1,079,956	32,522,140
" 21 ...	14,553,000	3,125,534	1,898,487	11,702,567	1,115,006	32,590,194
" 28 ...	14,553,000	3,132,547	1,905,513	11,441,511	1,130,614	32,163,215
Nov. 4 ...	14,553,000	3,136,875	2,858,100	10,932,023	1,120,999	32,600,997
" 11 ...	14,553,000	3,166,072	3,525,577	10,243,333	1,114,875	32,602,857
" 18 ...	14,553,000	3,172,364	4,465,918	9,685,004	1,070,665	32,946,951
" 25 ...	14,553,000	3,176,199	4,782,390	9,715,309	1,044,770	33,271,668
Dec. 2 ...	14,553,000	3,121,642	4,994,893	9,759,246	1,052,658	33,481,430
" 9 ...	14,553,000	3,124,711	5,545,408	9,691,373	1,032,107	33,936,599
" 16 ...	14,553,000	3,132,039	6,035,675	9,710,512	993,112	34,424,338
" 23 ...	14,553,000	3,140,652	6,560,414	10,009,957	938,632	35,202,645
" 30 ...	14,553,000	3,152,753	6,695,436	10,558,887	892,118	35,851,694

Date.	Government Securities.	Other Securities.	Notes.	Gold and Silver Coin.	Total Cr.
1854.	£	£	£	£	£
Oct. 7 ...	11,015,466	16,677,317	6,391,015	622,436	34,706,234
" 14 ...	11,079,088	15,116,462	5,755,445	571,195	32,522,140
" 21 ...	11,113,273	14,742,463	5,946,605	587,853	32,390,194
" 28 ...	10,960,762	14,556,912	6,086,425	559,116	32,163,215
Nov. 4 ...	11,521,492	14,155,089	6,366,340	555,076	32,600,997
" 11 ...	11,413,016	13,899,081	6,710,345	580,415	32,602,857
" 18 ...	11,429,871	13,850,566	7,024,150	642,364	32,946,951
" 25 ...	11,461,703	13,850,146	7,352,645	607,174	33,271,668
Dec. 2 ...	11,517,788	13,710,468	7,627,670	625,563	33,481,430
" 9 ...	11,604,267	13,732,473	7,928,830	671,029	33,936,599
" 16 ...	11,565,237	13,869,287	8,330,780	659,034	34,424,338
" 23 ...	11,609,583	14,581,403	8,352,740	658,919	35,202,645
" 30 ...	11,611,553	15,806,634	7,779,685	653,822	35,851,694

CURRENCY.—Continued.

COUNTRY BANKS.

Average amount of Promissory Notes in Circulation in England and Wales in each Week ended on a Saturday, for the Fourth Quarter of 1854.

[Compiled from the "Banker's Magazine."]

ENGLAND AND WALES.

Date.	Private Banks.	Joint Stock Banks.	Total.
1854.	£	£	£
Oct. 7.....	3,874,813	3,142,073	7,016,886
„ 14.....	4,003,952	3,158,997	7,162,949
„ 21.....	4,005,657	3,132,055	7,137,712
„ 28.....	3,981,668	3,125,842	7,107,510
Nov. 4.....	3,980,027	3,156,359	7,136,386
„ 11.....	3,979,549	3,158,733	7,138,282
„ 18.....	3,926,372	3,126,001	7,052,373
„ 25.....	3,898,704	3,098,501	6,997,205
Dec. 2.....	3,885,306	3,095,978	6,981,284
„ 9.....	3,850,702	3,077,421	6,928,123
„ 16.....	3,829,606	3,057,878	6,887,484
„ 23.....	3,830,616	3,059,677	6,890,293

Fixed Issues—Private Banks, £4,607,455 ; Joint Stock Banks, £3,325,857.

Average amount of Promissory Notes in Circulation in Scotland and Ireland during the Four Weeks ended the 28th October, the 25th November, and the 23rd December, 1854.

SCOTLAND.

Four Weeks ended	£5 and above.	Under £5.	Total.
1854.	£	£	£
Oct. 28.....	1,454,939	2,727,185	4,182,128
Nov. 25.....	1,543,601	2,908,304	4,451,908
Dec. 23.....	1,522,168	2,793,922	4,316,095

IRELAND.

Four Weeks ended	£5 and above.	Under £5.	Total.
1854.	£	£	£
Oct. 28.....	2,995,724	3,347,355	6,343,081
Nov. 25.....	3,055,594	3,602,717	6,658,312
Dec. 23.....	2,984,835	3,737,812	6,722,649

Fixed Issues—Scotland, £3,087,209 ; Ireland, £6,354,494.

QUARTERLY JOURNAL

OF THE

STATISTICAL SOCIETY.

JUNE, 1855.

Twenty-first Anniversary Meeting of the Statistical Society.
Session 1854-55.

[Held at No. 12, St. James's Square, London, Thursday, 15th March, 1855.]

THOMAS TOOKE, ESQ., V.P., *in the Chair.*

THE Circular convening the Meeting having been read and confirmed, Dr. Guy, one of the Honorary Secretaries, read the following Report of the Council on the progress of the Society during the past year:—

Report of the Council.

Twenty years have now elapsed since the Statistical Society held its first Anniversary Meeting, and received the congratulations of the Council on its then state and prospects. Its subsequent progress, as set forth in successive annual reports, has fully justified the sanguine expectations then entertained.

The Society now consists of 353 Members, exclusive of Foreign Honorary, and Corresponding Members, which number has undergone little change since the last Anniversary Meeting. Fourteen new Fellows have been elected; eight have resigned; and nine have died. The withdrawals from the Society have been below, but the deaths above, the average.

The income of the Society for the year ending the 31st December, 1854, falls short by less than 30*l.* of the very large receipts of the previous year. This slight falling-off is partly accounted for by the small amount of arrears left to be collected, and partly by the total absence from the column of receipts of compositions, which amounted for the year 1853 to 105*l.* The finances of the Society have, on the other hand, been recruited by the addition of upwards of 100*l.* to an item to which the Council have great satisfaction in adverting. At their last Anniversary Meeting they had occasion to invite the special attention of the Fellows to the increasing sale of the Journal,

as evidenced by the receipts for the last three years; and they looked forward to a still further increase, in consequence of the publication of the Index. In this expectation the Council are happy to say that they have not been disappointed, for the receipts from this source have been more than sufficient to supply the deficit which an absence of compositions would have left. The sales of the Society's Journals, which realized 50*l.* on the average of the six years ending 1851, 70*l.* in 1852, and 90*l.* in 1853, yielded in 1854 no less than 152*l.*, exclusive of the Index, which created a new source of income to the amount of 45*l.* These two sources of income combined carried to the credit of the Society no less than 197*l.*

At the period of the last Anniversary Meeting the Index was passing through the press, and the Council ventured to anticipate such a demand for it as would enable them to defray the expense of its publication without incurring any fresh liability. This anticipation also has been fulfilled, and more speedily than might have been expected; for, in addition to the receipt of 45*l.* from the sales of the Index itself, there is every reason to believe that the receipt of upwards of 100*l.* for sales of Journals in 1853 and 1854, in excess of the receipt of previous years, is directly traceable to the publication of the Index. A calculation based upon this assumption shows that the publication of the Index has entailed no expense upon the Society; while the remaining copies constitute a valuable property, and a powerful inducement to Fellows of the Society and purchasers of the Journal to complete their sets. The Council are aware that much of the success which has attended this financial experiment is due to the active and zealous services of Mr. Cheshire, the Acting Secretary of the Society.

The expenditure of the Society has fallen short of that of the previous year by 34*l.* The Society's liabilities which, on the 31st December, 1853, amounted to 135*l.* 2*s.* 9*d.*, were reduced on the last day of 1854 to the single liability, since discharged, of 111*l.* 9*s.* 2*d.*, due to the Society's printer. The Council have reason to hope that the balance-sheet for the year ending the 31st December, 1855, will be found free from any entry under this head. This freedom from debt might have been realized, in accordance with the hope expressed by the Council last year, in the balance-sheet now presented to the Society, had it not been for the accidental absence of Compositions. Encouraged by the satisfactory state of the Society's finances, the Council have sanctioned an expenditure of 45*l.*, for the preparation of a Catalogue of the books in the Library. This Catalogue, which they have entrusted to the able and experienced hands of Mr. Wheatley, by whom the valuable Index to the first fifteen volumes of the Society's Journal was compiled, is now complete, and is submitted to the Meeting. The following extracts from a Report given in to the Council by Mr. Wheatley will explain the principle on which this very valuable Catalogue has been compiled. "The library contains 2,000 distinct works, including Tracts, but exclusive of Blue Books; and 2,600 volumes. The Catalogue is arranged in one general *Alphabet*, the library itself being arranged in classes on the shelves. Each work has but one principal descriptive entry. This entry is under the *Author's* name. Anonymous works are placed under the

subject to which they relate. Short classifications of the subjects on which the books in the Library treat, are introduced, referring to the names of the Authors in the same General Alphabet, thereby uniting the advantages of the alphabetical and classified systems. The Tracts are bound up in six collections, or series, corresponding with the system of arrangement adopted with the books upon the shelves; and they are referred to in the Catalogue by number of Series, number of Volume, and number of Tract. Periodical Literature and Books of Reference form classes or divisions by themselves." Material improvements in the arrangement of the books, and considerable additions to the Library, have been made during the progress of this very useful work; and much attention has been given to the completion of defective sets, and the binding of the more valuable books. The improvement which has been effected in the Library itself, and in the rooms of the Society, is too considerable not to have attracted the attention of the Fellows.

Considerable additions have been made to the Library during the past year, partly by purchase and partly by donation. Among the more considerable donors the Council would mention, as deserving of special acknowledgment, the India Board, Mr. Edwin Chadwick, Monsieur Quetelet, and Dr. Edward Jarvis, who has forwarded a third and fourth collection of Statistical and Official publications from America. The Council would also make special mention of the kindness of Lord Romney, in presenting the Society with one of the volumes of the Finance Reports of the United Kingdom, much needed to complete their set. They would also take this opportunity of stating that the Reports for the years 1814 and 1815 are still wanting.

The Ordinary Meetings of the Society held since the last Anniversary have been unusually well attended; and several interesting communications have been read and discussed. Each of the four subdivisions into which the general science of Statistics was divided by the Statistical Section of the British Association for the Advancement of Science, held at Cambridge, in the year preceding the foundation of this Society, namely, "1. Economical Statistics, 2. Political Statistics, 3. Medical Statistics, 4. Moral and Intellectual Statistics, has been illustrated by these communications. To the division of Economical Statistics belong Dr. Guy's paper, "On the relation of the Price of Wheat to the Revenue derived from Customs and Excise;" Mr. Danson's able paper on "Our Commerce with Russia in Peace and War;" Mr. Minasi's paper, "On a Decimal System of Coinage;" Dr. Waddilove's paper, "On the effect of the Recent Orders in Council in relation to British, Russian, and Neutral Commerce;" and Mr. Newmarch's valuable communication, "On the Loans raised by Mr. Pitt during the first French War, 1793-1801, with some statements in defence of the Methods of Funding employed." All these communications, from their direct bearing on questions of the highest interest to the Politician and Statesman, might have been classed with equal propriety under the second head of Political Statistics, to which division Mr. William Tayler's "Statistical and Historical View of the Statutes of the Realm" may also be referred. To the subdivision of Medical Statistics belongs Mr. Angus's com-

munication, "On the Movement of the Population, Mortality, and Fatal Diseases in London in the last fourteen years." Under the head of Moral and Intellectual Statistics, the paper by the Reverend Robert Everest, "On Pauperism and Crime in the United States of America," and that by Mr. Horace Mann, "On the Statistical Position of Religious Bodies in England and Wales," would have to be placed. Mr. Bell's paper on the "Statistics of the Colony of Victoria," and Mr. Welfon's paper on the "Statistics of the United States of America," must be arranged in a class of General Statistics, for which the classification just quoted makes no provision. Before leaving this portion of their Report the Council would advert to the bearing which many of the communications now enumerated have upon the most interesting and important questions of the day. To this circumstance may doubtless be attributed the growing estimation in which the Society is held; and it was for the purpose of throwing light upon such questions—for the purpose of procuring, arranging, and publishing "facts calculated to illustrate the condition and prospects of Society"—that the Statistical Society was originally founded.

The British Association for the Advancement of Science, which met at Liverpool in September, 1854, under the Presidency of the Earl of Harrowby, was distinguished by the success that attended the Statistical Section, over which Thomas Tooke, Esq., F.R.S., one of the Vice-Presidents of this Society, presided; no less than by the great prominence given to the science of Statistics in the able and eloquent inaugural address of the noble Chairman. Several valuable papers read at that Meeting have already appeared in the pages of our Journal, and others still remain in reserve. Those who have been so fortunate as to hear or peruse the inaugural address delivered by the Earl of Harrowby on the occasion referred to, will rejoice that the noble Earl has consented a third time to fill the office of President of the Statistical Society.

Amidst so many subjects of congratulation the Council revert with extreme regret to the losses which the Society has lately sustained by the decease of several of its Members. The list of the Foreign Honorary Members of the Society has been deprived of the distinguished name of Leon Faucher, and of that of M. Bergsøe, of Copenhagen, of which two names the latter was added only last year.

The Society has also to regret the loss of one of its distinguished Members, who had belonged to it from its very foundation, The Reverend Richard Jones, ex-Professor of Political Economy in King's College, and the still more severe loss of another of its original Members, Mr. Joseph Hume. The Society will share with the Council, the Legislature, and the Country, the regret with which they have received the announcement of the decease of one who, during a long life of sustained industry, undeviating integrity, and watchful care of the public interests, did so much to demonstrate the value of accurate statistical information, and to apply it to the purposes of good government.

The Earl of Harrowby, in moving the adoption of the Report, expressed his delight that the Society was in a good financial position,

and that the sale of the Journal continued to increase. Some one advocated a few years ago that the Journal should be suspended; but he (the noble lord) was of opinion that, whatever might be sacrificed, that should be retained. It was the great link that bound together the present and the absent Members of the Society, and would prove eminently useful to the moralists and legislators of future ages. By means of that Journal the Society was sending out from day to day very valuable records, of which posterity would reap the fruit. The importance of the Society was increasing every day. It was clear that parliament was becoming more and more unfitted for the complete discussion of great questions, which required calm and lengthened consideration. Parliament was overwhelmed with business, and it was not to be expected that, under such circumstances, 500 or 600 men could meet and discuss philosophically those great and abstruse subjects with which it was the duty of the Society to deal. One of the great functions of the Society was to prepare matters for that great assembly, and that duty it appeared to be performing well. The Society was, moreover, instructing the public mind. Let them take, for instance, that valuable Paper which was read by Mr. Newmarch a few evenings ago, on the subject of the loans raised by Mr. Pitt, and he would ask whether the publication of that valuable essay was not conferring an immense benefit upon parliament and the public? The exertions of the Society were not confined to political matters. It embraced all other subjects having a direct bearing on the well-being of society, and it would have been well if some of our soldiers and sailors had availed themselves of the information it had circulated. There would not then have been that awful sacrifice of life which had been caused by ignorance and blundering.

Colonel Sykes seconded the adoption of the Report, together with the abstract of receipts and payments, and balance sheet of assets and liabilities. He expressed his entire concurrence in the observations of Lord Harrowby, and added that he thought some of the dogmas of political economy might be placed on less questionable bases than those upon which they now stood, by a careful review and collation of the facts that it had been the duty of the Statistical Society to place before the public in the seventeen volumes of its Journal. Legislation founded upon assumptions could only be speculative, and might be injurious to the community; but comprehensive statistics necessarily produced generalizations, and consequent safety, in the initiation and adaptation of new laws.

Lord Ebrington bore testimony to the great value of the Society to public men, on account of the fulness and impartiality with which the subjects brought under its notice were investigated and discussed. It was quite a mistake to suppose that all questions brought before Parliament were, or could be, fully or fairly debated, since there were frequently elements in the consideration of questions which it did not suit the tactics of either party to touch, to say nothing of those with which the speakers were imperfectly acquainted.

A ballot was then taken for the President, Council, and Officers for the year ensuing, and the following was declared to be the List:—

President.

The Right Hon. the Earl of Harrowby, F.R.S.

Council.

James Bird, M.D.

Sir John Peter Boileau, Bart., F.R.S.

The Right Hon. Lord Viscount Ebrington, M.P.

William Farr, Esq.

The Right Hon. Charles William, Earl Fitzwilliam, K.G., F.R.S.

James William Gilbart, Esq., F.R.S.

The Right Hon. W. Ewart Gladstone, M.P., D.C.L.

William Augustus Guy, M.B.

The Right Hon. The Earl of Harrowby

James Heywood, Esq., M.P., F.R.S.

Thomas Hodgkin, M.D.

*John Gellibrand Hubbard, Esq.

Charles Jellicoe, Esq.

William Golden Lumley, Esq.

The Right Hon. Holt Mackenzie, F.G.S.

*Herman Merivale, Esq.

Horace Mann, Esq.

William Newmarch, Esq.

The Right Hon. Lord Overstone

The Right Rev. The Lord Bishop of Oxford, F.R.S.

The Right Hon. Sir John Somerset Pakington, Bart., M.P.

Robert Aglionby Slaney, Esq.

*T. H. Sutton Sotheron, Esq., M.P.

*The Right Hon. Lord Stanley, M.P.

Colonel W. H. Sykes, F.R.S.

Thomas Tooke, Esq., F.R.S.

Lord Harry George Vane, M.P.

*John Walter, Esq., M.P.

*The Right Hon. Lord Wharnccliffe, F.R.S.

The Right Hon. Lord Wodehouse

The Rev. E. Wyatt-Edgell

** Those marked thus are New Members.*

Treasurer.

William Farr, Esq.

Honorary Secretaries.

William Augustus Guy, M.B.

William Newmarch, Esq.

William Golden Lumley, Esq.

Lord Stanley, M.P., in moving a vote of thanks to the retiring President, Council, and Officers, for their services during the past year, congratulated the Society on its increased and increasing usefulness. He thought some means ought to be adopted for making its operations better known, especially amongst members of the legislature, who were deeply interested in the questions it investigated. He thought also that people who took an interest in public affairs should be made more extensively acquainted with what the Society was doing. For himself he would say, he had no idea of the practical value of the Society in reference to the public affairs of the day, prior to becoming a member of it, and he was afraid that many others participated in that ignorance. The journals of the Society contained most valuable information; but at present he believed their perusal was almost altogether confined to those who took an interest in statistics, and already appreciated their importance. As regarded the Society itself, its present position was highly satisfactory, and reflected the greatest credit on those who had been intrusted with its management.

Mr. Tottie seconded the motion, and it was carried unanimously.

Lord Ebrington, M.P., then moved, and Mr. Lodge seconded, a vote of thanks to the Chairman, and the meeting separated.

Abstract of RECEIPTS and PAYMENTS for the Year ended the 31st of DECEMBER, 1854.

RECEIPTS.		PAYMENTS.	
	£ s. d.		£ s. d.
Balance brought forward (less debit balance of Petty Cash).	68 8 10	Rent	150 0 0
Arrears 2 Subscriptions, at 2 guineas	4 4 0	Salaries { Printing £229 0 9 }	195 0 0
Subscriptions for the Current Year, 282 at 2 guineas	592 4 0	Journal { Advertising, &c. 33 16 7 }	262 17 4
Dividends	27 2 10	General Index (in addition to £25 last year)	130 4 6
Journal Sales (including Index Sales, £45 2s. 6d.)	197 0 6	Library	30 12 9
Institute of Actuaries (half share of Rent)	75 0 0	Stationery and Printing (1½ year)	59 14 1
		Postage and Receipt Stamps	11 10 0
		Firing and Lighting	8 17 11
		Ordinary Meetings	16 5 9
		Miscellaneous	25 4 11
		Balance carried forward (less debit balance of Petty Cash),	73 12 11
	£964 0 2		£964 0 2

Balance Sheet of ASSETS and LIABILITIES on the 31st of DECEMBER, 1854.

ASSETS.		LIABILITIES.	
	£ s. d.		£ s. d.
Cash Balance in Bank (less debit balance of Petty Cash)	73 12 11	Journal.—Printer (½ year)	111 9 2
Stock, New 3 per Cents., £569 17s. 0d., cost	567 0 0	Balance in favour of Society	956 9 9
Stock, 3 per Cent. Consols. £328 15s. 4d., n	300 0 0		
Office Furniture, Fixtures, &c. (exclusive of the Library)	100 0 0		
Arrears 13 Subscriptions, at 2 guineas	27 6 0		
	£1,067 18 11		£1,067 18 11
		Examined and approved—	
		(Signed) { WILLIAM CAMPS, M.D. } Auditors.	
		W. B. HOUGE, C. JELlicoe,	
		12, ST. JAMES'S SQUARE, LONDON, 20th January, 1855.	

On the Loans raised by Mr. Pitt during the First French War, 1793-1801; with some statements in defence of the Methods of Funding employed. By WILLIAM NEWMARCH, one of the Honorary Secretaries of the Statistical Society.

[Read before the Statistical Society, on Monday, the 19th of February, 1855.]

IN discussing this subject, I shall consider in succession the following topics:—

- I.—GENERAL IMPRESSIONS entertained of MR. PITT'S Policy as regards the LOANS raised from 1793 to 1801.
- II.—Specific allegations against MR. PITT, and some suggested Answers.
- III.—THE OUTBREAK of the WAR, 1st February, 1793.—The Political Events which immediately led to it.
- IV.—COMMERCIAL EMBARRASMENTS, and SCARCITY, in the early part of 1793.
- V.—THE FIRST LOAN of the War of 4,500,000*l.* in March, 1793.—Its History and its Terms.
- VI.—Statement of the SEVEN FURTHER LOANS, which it is proposed to examine in detail.—The 11,000,000*l.* of February, 1794.—The Floating Debt of Navy Bills.
- VII.—The 18,000,000*l.* of 1st February, 1795.—The condemnation by MR. FOX of the ADVANCES made to the EMPEROR.
- VIII.—The 18,000,000*l.* of December, 1796.—The Committee of Inquiry with reference to it.
- IX.—THE LARGE FUNDING of Navy and Exchequer Bills in November, 1796.—Failure of the attempt to accomplish the operation in the 4 and 5 Per Cents.
- X.—Gloomy state of affairs 1796-97.—LOYALTY LOAN of 18,000,000*l.* in December, 1796.—Its History, Terms, and the Loss entailed by it on the Subscribers.—Loan of April, 1797.
- XI.—GENERAL CONCLUSIONS, justified by the foregoing DETAILS.—Those Conclusions are in Favour of MR. PITT.
- XII.—THE DIFFICULTIES which prevented LARGE TAXATION, 1793-1798.—Rapid succession of BAD HARVESTS, but great efforts made.
- XIII.—Great Influence produced by false Calculations of the weakness of the ENEMY, and by false reliance on the SINKING FUND.—Testimony of MR. BURKE and LORD GRENVILLE.
- XIV.—Statement of the QUESTION as regards the COMPARATIVE ELIGIBILITY of contracting Loans in LOW RATE and HIGH RATE FUNDS.
- XV.—THE strong PRACTICAL CONSIDERATIONS in favour of preferring CONSOLS or a Low Rate Fund.
- XVI.—THE COMPARATIVE RESULTS of the TWO METHODS as applied to the Ten Largest Loans, 1793-1801.
- XVII.—THE Same as regards the LOAN of 8,000,000*l.* of March, 1847.
- XVIII.—MR. PITT'S Doctrines relative to RAISING WAR SUPPLIES within the YEAR.

I.—*General Impressions entertained of Mr. Pitt's policy as regards the Loans raised from 1793 to 1801.*

Among those persons who by taste or occupation are led to interest themselves in questions relating to the General Finance of the country, and especially in questions relating to the Funding System and the National Debt, I believe it would be difficult to find many who are not prepared to express very strong censure of the financial policy of Mr. Pitt, during the first French War of 1793—1802, as that policy was displayed in the contraction of Loans.

The intemperate accusations of a period of violent contest between political parties, holding scarcely an opinion in common, have, as regards Mr. Pitt's measures of finance, survived to subsequent generations; and it is not altogether to our credit that we should continue to repeat the abstract censures originated by the enemies of Mr. Pitt, and neglect almost wholly to make ourselves familiar with the real nature of those extreme practical difficulties which were certainly considered by the public who supported Mr. Pitt as a complete vindication of the financial expedients he found himself compelled to employ.

War was declared against England and Holland by the National Convention on the 1st February, 1793: and the definitive treaty of Peace was signed at Amiens on the 25th March, 1802. On the first of these dates the funded capital of the Debt was 238—on the second 574 Millions Sterling; during nine years of war therefore the funded capital of the Debt was increased by 336 Millions. Mr. Pitt ceased to be Premier a year before the Peace, or on the 17th of March, 1801; but in reality his was the mind which devised the system, in accordance with which these 336 Millions were added to the Debt.

Now for this amount of debt inscribed the actual sum received in money was about 223 Millions; or, in general terms, only two-thirds of the capital created; and hence arises the censure and the accusation. I pass over all that part of the controversy which relates to the policy and the management of the War, and therefore over all those questions which relate to the plan of opposing the enemy by subsidies of money to Continental Allies, and I confine myself to the censures and the accusations which have been, and are, directed against the manner in which this great debt was contracted.

II.—*Specific allegations against Mr. Pitt, and some suggested Answers.*

It is said, then, that there were two capital faults, viz., ignorance of some of the simplest rules of finance;—and gross extravagance in the manner in which the Loans were brought into the market.

It is laid down as a fundamental rule, obligatory on all finance ministers in this country,—and as especially binding on Mr. Pitt,—that all Loans shall be raised at the market rate of interest at the time;—that the amount of capital funded shall in no way exceed the capital actually raised in money;—and that consequently it is the duty of the Minister practically to disregard any considerations of difficulty to the Exchequer, arising from the proposal of novel terms in a straitened money market, or of excessive pressure to a community already suffering from inordinate burdens and extreme dangers.

It is alleged that Mr. Pitt systematically violated these canons of finance, and violated them without any sufficient necessity, and certainly, it is said, without any compensating advantage. In point of fact there have been, and I dare say there are, persons who believe that the whole of the 103 millions of debt—which represent the difference between the money received and the capital created—was a loss to the country of the grossest and most gratuitous kind; a loss wholly unrelieved by any trace of justification or deduction.

The real gravity of the charge, however, is found in those quarters where, with great force and ingenuity of reasoning, it is urged—that

it was the duty of Mr. Pitt to have raised the loans of the First French War in strict accordance with the principle of paying a rate of interest for each loan equal to the market value of money at the time; and, adopting such a course, to have enabled the country, on the return of peace, to have materially reduced the annual rate of interest, and therefore the annual charge of the debt. And further, that it was not less his plain policy than his distinct duty to have raised a very much larger portion of the Supplies within the year; and in that manner, especially during the earlier years of the War, to have avoided those onerous loans which have descended to ourselves unredeemed and perhaps but little susceptible of redemption.

In referring to the party which holds these views I would be understood to do so with great respect. It includes names of the greatest eminence; and if I venture to call in question their opinions on the subject now under discussion, I do so for the specific reason that, as far as I can judge, those opinions have been formed on abstract grounds, and not after a careful examination of the particular facts and circumstances which marked the whole of the period from 1793 to 1801, and placed Mr. Pitt in situations of financial difficulty, which were wholly new, and happily since then have had no parallel.

I am sanguine enough to suppose that such a careful examination as I have just mentioned will show in a very decisive manner—(1.) That it would have been practically impossible to have raised most of Mr. Pitt's loans in the amounts, and at the times required, if the principle of borrowing at par had been enforced: (2.) That even if the money had been raised in Five per cent., instead of mainly in Three per cent. Stock, the difficulties would have been frequently excessive, and in every case the rate of interest, and therefore the annual charge, very considerably higher: (3.) That when the facts are properly examined there is no adequate justification for imputing extravagance to the Minister, as regards the manner in which the loans were raised; nor for believing that in the contracts actually entered into, the country did not obtain the full benefit of whatever *bonâ fide* competition could be excited among persons qualified by wealth and character to afford proper security for a punctual fulfilment of their engagements: (4.) That in the anxious and difficult situation of this country during most of the years of the Revolutionary War it was a consideration so pressing as to become a necessity of the first order, not to increase, even by the smallest avoidable amount, the pressure of the existing taxes: and (5.) That as a general result it was not possible, with a due regard to the exigencies of the time—especially during the six years 1793-98, both inclusive—to raise within the year by means of old and new taxes a larger revenue than was actually obtained.

III.—*The Outbreak of the War 1st February, 1793.—The Political Events which immediately led to it.*

We can hardly commence an examination of the financial measures of the War without first referring to some of the principal circumstances affecting this country at the time of its outbreak in the second month of 1793.

The message from the King to Parliament which, on the 28th of January, 1793, accompanied a copy of the correspondence between Lord Grenville, the Foreign Secretary, and M. Chauvelin (the personage who had communicated with the British Government on the part of France since the dethronement of Louis XVI., in the August previously) described the hostile steps then adopted as "measures necessary for opposing views of aggrandizement and ambition on the part of France, which would be at all times dangerous to the general interests of Europe, but are peculiarly so when connected with the promulgation of principles which lead to the violation of the most sacred duties, and are utterly subversive of the peace and order of all civilized society;" and it would be difficult perhaps to describe in language more free from ambiguity the real origin of the War which was then entered upon by Great Britain. It was a War which could be no longer avoided, if this country was to exert any influence in restraining the power of France within its former limits; and in any degree repress that violent democratic fanaticism which led the revolutionary party to enter upon a career of foreign propagandism, subversive, as the Message said, of the peace and order of all civilized society.

This country and Holland were the last of the leading powers of Europe to take up arms against France; and if it had not been for the atrocious measures which had marked the conduct of the Jacobin party, during the nine or ten months immediately preceding the outbreak of the War, it may be considered certain that there would have been no departure from the scrupulous neutrality which Great Britain had observed since the Assembly of the States General in May, 1789.

It is too much the habit to forget that the character and aspect of the Revolution became seriously changed for the worse after the dissolution of the Constituent Assembly on the 29th of September, 1791; and when, in consequence of the fatal decree which disqualified the members of that body from being again elected, the supreme power passed into the hands of the obscure and penniless adventurers who composed the great majority of the second chamber which arose out of the Revolution, and which, under the name of the Legislative Assembly, commenced its sittings on the 1st October, 1791. This representative body continued in existence for a few weeks short of a year (to the 20th September, 1792), or until the meeting of that third chamber which, under the name of the National Convention, has left behind it one of the most terrible histories which has come down to us in an authentic form.

But if the crisis reached its culminating point under the Convention, we must in justice not forget that the seeds of nearly all the subsequent crimes and mischiefs were sown during the eleven months from October, 1791, to September, 1792, and in this interval, the Legislative Assembly held in its hands the fate of France and the peace of Europe. Mignet is not an historian likely to bear testimony against the popular cause of the Revolution; but even he confesses that "*l'œuvre de l'Assemblée Constituante périt moins par ses défauts que par les coups des factions.*" Placée entre l'aristocratie et la multitude, elle fut attaquée par l'une et

envahie par l'autre." It was under the Legislative Assembly that the Feuillant Ministry was turned out (March, 1792); and the Girondist Ministry, which took its place, led or compelled by the riot of the 20th June (1792), the massacre of the Swiss Guard of the 10th August and the still more terrible massacre in the prisons of the 2nd September—to commit itself to those ultimate measures for the destruction of royalty, and the delegation of absolute power to the mob of Paris, which, in the course of a very short time, introduced anarchy and violence into every department of the State.

The first measure of the National Convention was an unanimous vote (20th September, 1792) for the abolition of royalty,—the establishment of a republic,—and the declaration that that year was the "Year I. of the French Republic." Louis and his family were already in prison, and the great spectacle of the autumn of 1792 was the debates which preceded the arraignment of the King, and which intervened between the trial and the execution. That execution took place on the 21st of January, 1793, and it was this event which, so far as this country was concerned, suddenly converted a previous neutrality into a state of declared war.

I say *suddenly* converted; for there is abundant evidence to prove that so firmly persuaded were all classes of the determination of Mr. Pitt to preserve peace as long as possible, that in no branch of trade was there the least appearance of doubt or suspense on the ground of apprehended war, till within a few weeks of the actual outbreak; and until it became obvious that with an incendiary government, like that which had possessed itself of power in France, it would be impossible for this country to remain on friendly or even neutral terms. Even so late as the 20th December, 1792, five weeks only before the outbreak of the War, the vote taken for the Sea and Land forces for the year 1793 was for only 20,000 seamen and 5000 marines for the Navy, at a cost of 1,300,000*l.*;—and for 17,344 men for the Army, at a cost of 579,174*l.* When war had been declared, the addition made (11th of February, 1793) to the Navy was 20,000 men (1,040,000*l.*), and to the Army 9,945 men (437,837*l.*); additions which subsequent experience bitterly taught us were far too small.

There can be no reasonable question but that our calculations on continued peace had led to such a reduction of establishments that when hostilities had to be commenced in 1793 we were, in the most emphatic sense, unprepared to carry them on with vigour; and if further evidence had been required on this point, it has been recently furnished by the publication of the correspondence and papers of General Sir Harry Calvert,* who, as aide-de-camp to the Duke of York, in the campaigns of 1793 and 1794-5, is a perfectly competent witness.

IV.—*Commercial Embarrassment, and Scarcity, in the early part of 1793.*

The War commenced under circumstances of great internal embarrassment in this country.

* "Journals and Correspondence of General Sir Harry Calvert, Bart." Edited by his son, Sir Harry Verney, Bart.—(Hurst and Blackett) 1853.

The Harvest of 1792 was the third of the dark series of seasons of deficient produce which marked the fourteen years from 1789 to 1802 (both inclusive). The harvests of 1789 and 1790 had been defective, but that of 1792 was seriously unfavourable. At the end of September (1792) the price of wheat had risen to 53s. 4d. (from 40s. 11d.), and on the 9th of November following exportation was prohibited, and importation was allowed at a low duty.

But there was aggravated Mercantile Discredit as well as Scarcity. "Immediately preceding the declaration of war," says Mr. Tooke (Hist. i., page 176), "there was a great revulsion and derangement of commercial credit, not only in this country but in the principal trading cities of the continent of Europe." Of that discredit the War was in no sense the origin. It arose out of a train of causes of a special nature and of long continuance. The failures began in November, 1792,—“When,” says MacPherson, “there were no fewer than 105; and there were very few months in all the years preceding 1792 wherein the *Gazette*, that doleful register of commercial mis-carriage, had exhibited above the half of that number.” (*Annals*, iv., 254). The War did not of course tend to relieve embarrassments already so chronic. “The unprecedented number of bankruptcies in November,” I again quote MacPherson, as a contemporary of the period, “was prodigiously exceeded by the number and amount of those which took place in the spring and summer of this year (1793), viz. :

105 in March, 1793		158 in June, 1793
209 „ May „	|	108 „ July „
188 „ April „	|	

“Many houses of the most extensive dealings and most established credit failed, and their fall involved vast numbers of their correspondents and connexions in all parts of the country. In the general distress and dismay every one looked on his neighbour with caution, if not suspicion. It was impossible to raise any money upon the security of machinery and shares in canals, for the value of such property seemed to be annihilated in the gloomy apprehensions of the sinking state of the country, its commerce, and manufactures; and those who had any money, not knowing where they could place it with safety, kept it unemployed and locked it up in their coffers.”

There is abundant collateral testimony that this dismal picture is not overcharged. To the failures of the merchants and manufacturers was added the still more disastrous failure of numerous Country Banks.*

In April (1793) the distress became so severe that it was necessary for the Government to apply extraordinary measures of relief; and at a meeting of merchants at the Mansion House on the 23rd (April), it was agreed to apply to Mr. Pitt to advance Exchequer Bills on the security of goods, and merchandize, and other property. Parliament was accordingly applied to, and on the 29th (April),

* The total number of Bankruptcies was as follows:—

1791	769	of which 1 was a Country Bank.
1792	934	„ 1 „ „
1793	1,956	„ 26 were Country Banks.

Exchequer Bills to the extent of 5,000,000*l.* were ordered to be applied as advances;* and it is exceedingly discreditable to the Opposition that they attempted to convert even this obvious and imperative measure of interference, into a ground of charge against the Minister and into a source of party triumph. Mr. Fox thought it worth while to contend seriously that the proposal to make temporary advances to merchants on ample security, and at a high rate of interest, was even in the midst of such a crisis, a violation of the Constitution, and a suspicious means of placing undue power in the hands of the Executive. The measure, however, was perfectly successful, and in point of fact, the moral effect produced by the assurance that assistance could be obtained prevented in most cases, any assistance being applied for.

V.—*The First Loan of the War of 4,500,000*l.* in March, 1793.—Its History and its Terms.*

We are now in a condition to trace the history of the First Loan raised by Mr. Pitt on the opening of the war.

The amount of that Loan was 4,500,000*l.*, and it was raised in 3 per cent. Consols, at the rate of 72*l.* money for every 100*l.* Stock, or according to the more convenient mode of quoting the terms of such transactions—138*l.* 16*s.* Stock for every 100*l.* Money, and the rate of interest therefore to the lender was 4*l.* 3*s.* 4*d.* per cent. per annum. The bargain for the Loan was concluded between the 11th and 17th of March, 1793.

It is important to have before us a statement of the quantity of Funded Debt standing under the different denominations of Stock, on the 5th of January, 1793, or at the time when this loan was contracted, and such a statement will be found in the following figures:—

*Amount of the Funded Debt of Great Britain as it stood on 5th January, 1793.
(Compiled from Dr. Hamilton, p. 319.)*

Funds.		Stock.	Stock.
3 per cent. Consols		£107,400,000	
3 „ Reduced		41,540,000	£
			148,940,000
3 per cent. South Sea Stock and Annuities			24,065,000
3 „ Annuities, 1751			1,919,000
3 „ Annuities, 1726			1,000,000
Bank of England.....			11,686,000
			187,610,000
4 per cent. Consols			32,750,000
5 „ Navy.....			17,869,000
			238,229,000

The total annual charge for annuities of various kinds, existing on 5th January, 1793, was 1,293,000*l.*; and of this sum, as far as can be ascertained, 680,000*l.* were “Long Annuity,” expiring 5th January, 1860. The remaining 613,000*l.* were annuities for lives and short terms. At, say, 20 years’ purchase, the 680,000*l.* per annum Long Annuities would represent a capital of 13,600,000*l.*

It is very material to observe upon this statement, that the two great descriptions of Stock, the 3 per cent. Consols and the 3 per cent. Reduced amounted to more than 60 per cent. of the total of

the funded debt; and that the 4 and 5 Per Cents. were of comparatively small amount.

The First Loan of 4,500,000*l.* now in question has been very severely criticised, as being at a single leap, a gross departure from sound principles. It is said that the Loan ought to have been negotiated by open or individual subscription; and ought to have been raised in either 4 or 5 per cent. stock. Now what are the facts?

On the 11th of March, 1793, Mr. Pitt laid the Budget before the House in a speech full of detail, and after showing that the deficiency in the Ways and Means was 4,500,000*l.* he added, that he proposed to raise that sum by "*individual* loans, but the particular terms of such "loans he had not specified, nor even his desire of entering into them "at all till the accounts were fairly before the House, and every one "apprized of the state of the revenue of the country." He then read a figured statement, in which he estimated that the money could be obtained at the rate of 75 per cent. Mr. Pitt's speech concluded with an appeal for the support of the House under the trying circumstances of the country; and this gave Mr. Sheridan an opportunity for saying "that the speech contained little novelty in it, except the "novelty of introducing, on a day devoted to figures, all the arts of "declamation. The right honourable gentleman had suddenly laid "down his pencil and slate, as it were, and grasping his truncheon," "had finished with an harangue, more calculated for the general of "an army going to storm a French redoubt than a minister of finance "discussing accounts in the sober hour of calculation with the "stewards and attorneys of a burdened and patient people."

On the 17th March, 1793, Mr. Pitt stated to the House the terms of the loan (already given above), and he said that he had desired to raise the money in 4 and 5 per cents., but had found it impracticable to do so. He admitted that the actual terms were more onerous than he had expected, but he had had no choice, for he had received tenders from only one set of persons. After a few general objections from Mr. Fox, the subject dropped.

We find the same statement in substance in the very useful work by Mr. Grellier,* who says, "It was originally intended to have raised "this loan in 4 or 5 per cent. stock, but the embarrassed state of "commercial credit having caused a scarcity of money, the Minister "only received offers from one set of subscribers; and as they preferred 3 per cents., it was judged expedient to conclude the bargain "in that stock, at the price of 72, although that price was between "4 and 5 per cent. under the current price;" and Mr. Grellier adds "that Mr. Pitt admitted that the terms were much more disadvantageous to the public than might have been expected, *but having "done every thing in his power to excite a competition but without "effect, the terms were the best he could procure."*

Now if we remember that this Loan was required about five weeks after the declaration of War had come suddenly upon the nation, and in the midst of that commercial distress, which, we have seen, com-

* "Terms of all the Public Loans, by J. J. Grellier, with an Appendix, by R. W. Wade.—Third Edition, 1812." Mr. Grellier was Cashier of the Royal Exchange Assurance; and, as he died in 1809, he was a contemporary of the earlier loans of the war.

pelled the Government to interfere specially in the very next month, (April), we may discern some reasons why persons having the command of capital should not be willing to lend it to the Government except on terms which left them a large margin for meeting unfavourable contingencies.

But further, we have the statement of MacPherson, that "when the war was declared the funds immediately felt the shock, and the 3 per cents. fell almost instantly from $79\frac{7}{8}$ to $70\frac{1}{2}$." This was a fall of $9\frac{1}{2}$ per cent., and indicated a degree of instability which no prudent contractor could attempt to face, unless fortified by very favourable terms. And favourable as the terms were, the Scrip of the loan bore no higher a price on its appearance than $1\frac{1}{2}$ -2 premium; and while that price was never exceeded, so long as the Scrip was in the market, the quotation fell at one time to a small fraction above par. Such a statement of the market value of the Scrip is of itself strong evidence that even at the rate of 72, the contractors for the loan were barely reimbursed for the risk attending the operation.

We may apply, however, another test.—It may be assumed that about the time of the contract, the market prices of the several kinds of Stock were as follows, and at those prices yielded the rates of annual interest stated, viz.:—

March, 1793.	3 per Cent. Consols.	4 per Cents.	5 per Cents.	Long Annuity.
	£	£	£	Years' Purch.
Market prices	77	89	104	$21\frac{1}{2}$
Yielding per cent. } per annum.....}	3 18	4 9 3	4 16 2	4 10
Equated Prices	77	102	128	....

Here we have a most striking depreciation of market value of the 4 and 5 Per Cents. as compared with Consols; a depreciation of (102-89), 13 per cent. as regards the 4 Per Cents., and of (128-104) 24 per cent. as regard the 5 Per Cents. And it does not require much financial skill to understand, that if the Minister had persisted in raising the loan in 5 Per Cents., he would have had to pay for the money, not 4*l.* 3*s.* 4*d.* per cent., but (as I have estimated for purposes of calculation to be presently referred to), at the very least, 5*l.* 2*s.* per cent., or 18*s.* 4*d.* per cent. more.

What are we to say then to the accusations of having needlessly resorted to a close clique of contractors, and of having extravagantly selected the 3 Per Cents. as the Stock in which to seek for tenders? There is no foundation in fact for these censures; on the contrary, Mr. Pitt did every thing in his power to excite a public competition, and to obtain the money in a high rate stock. He did not succeed, and for the sufficient reason that the difficulties of the money market were too great, and the perils and uncertainties of the time too perplexing to render it possible for the British Government even when acting through a minister so popular and powerful as Mr. Pitt, to

obtain the command of a few millions, except upon terms which did not involve any novelty and which left a very considerable margin to the subscribers. And we shall find as we proceed that it was substantially the same sufficient reason which year after year left the Government no choice but to obtain the necessary loans not in the form which they would most like, but in that particular manner, which the exigencies of the time rendered most attractive to those who had capital to spare.

VI.—*Statement of the Seven further Loans, which it is proposed to examine in detail.—The 11,000,000*l.* of February, 1794.—The Floating Debt of Navy Bills.*

It will be seen from the Tables A. B. C. in the Appendix, that between March, 1793, and February, 1801, there were Eighteen Loans, or operations of Funding of Navy and Exchequer Bills, operations in their nature equivalent to loans.

To examine each of these eighteen cases in the detail just applied to the 4,500,000*l.* raised in the second month of the War, would be quite incompatible with the limits of this Paper; and moreover, it would lead to a monotonous repetition of statements, not different in substance from those which have been already given with reference to the loan of March, 1793.

It will be the most convenient course, therefore, and it will fully answer my present purpose to confine my observations in detail to the circumstances connected with seven further cases, viz:—

Date.	Money Raised.	At Average rate per Cent.	Stocks.
	£	£ s. d.	
1794 (5th Feb.)	11,000,000	4 11 5	Loan in 3's, 4's, and Long Annuity.
1795 (23rd Feb.).....	18,000,000	4 16 2	Ditto.
„ (May).....	4,600,000	7 10 .	The <i>Imperial</i> Loan in 3's and Annuity for 25 years.
„ (7th Dec.)	18,000,000	4 13 6	Loan in 3's and Long Annuity.
1796 (Nov.)	13,029,000	5 7 11	Navy and Exchequer Bills funded.
„ (1st Dec.)	18,000,000	5 12 6	<i>Loyalty</i> Loan in 5's and under special conditions.
1797 (26th April)	14,500,000	6 7 .	Loan in 3's, 4's, and Long Annuity.

The Budget for the year 1794, was laid before the House in a speech of considerable length on the 5th February.

Mr. Pitt stated the deficiency in the Ways and Means, to be raised by loan, as 11,000,000*l.*; and proceeded to say, that he had thought it a prudent course to arrange conditionally for the loan. He said, “in negotiating the loan he had endeavoured to encourage “a free and open competition among monied men, without having “anything to do with the distribution of it; taking care only that “the biddings should be of such responsibility as to insure pay-

"ment of the first deposit, which might be considered as the security to the public for the rest. Five most respectable sets of monied men had offered, and the overtures were such as might have been expected. The terms were highly favourable to the public; and what was also desirable, he hoped safe to the lenders. For every 100*l.* money, they were to receive 100*l.* stock, 3 per cent. Consols; 25*l.* stock 4 per cents. and 11*s.* 5*d.* Long Annuity. At the current prices of the day, these were worth 99*l.* 19*s.* 9*d.* This, perhaps, was the first instance of a loan in which the fractional difference between the sum borrowed and the sum to be paid, was in favour of the public; and in which the discount on prompt payment was the only premium to the lender. The discount on 90*l.* viz: the sum remaining to be paid after the first deposit for eleven months, at 3 per cent. was 2*l.* 9*s.* 6*d.*, which added to 99*l.* 19*s.* 9*d.* made 102*l.* 9*s.* 3*d.* for every 100*l.* of the loan. This was no doubt a considerable premium, but the smallest he believed that had ever been given." To this very clear statement, it is hardly necessary to append any comment. It was listened to by the Opposition in silence, a circumstance which would not have happened if there had been any possibility of raising a question.

It must not escape notice, however, that the whole of that portion of the funded capital which was in excess of the quantity of 3 per cent. stock, (11,000,000*l.*) taken as the basis of the operations, was in 4 per cents. and in Long Annuity; and if we refer to the relative prices of the 5 per cents. we shall find abundant practical reasons why a funding in that stock was not attempted. At the time of the negotiations, the market prices were—

February, 1794.	3 per Cents.	4 per Cents.	5 per Cents.	Long Annuity.
	£	£	£	Years' Purch.
Actual Prices	67	84	101	20
Yielding per cent. } per annum..... }	4 9 6	4 15 3	4 19	4 15
Equated Prices	67	90	113	....

We find in the depreciation of the 5 Per Cents. given by these figures, a tolerably plain reason why they were excluded from the plan. The Scrip of this loan, however, was not very lucrative to the subscribers, for it came out at only 1½-2 premium, and fell very shortly to a very small fraction above par.

In the course of the Budget Speech, from which I have already quoted, there is a passage with reference to the kind of Floating Debt, called Navy Bills; that is, Bills issued by the authorities acting under the Admiralty, in payment of stores and provisions required for the Fleet, and which during the American War, and (in spite of Mr. Pitt's efforts) also during the last War, were a fertile source of embarrassment to the Exchequer.

Mr. Pitt said, in the speech of the 5th February, 1794, "In the course of the last year (1793) the Navy Debt had increased

"3,200,000*l.* This he did not mean to leave, as in former times, "accumulating till the end of the War. He meant to make immediate provision for the interest of the whole sum; to fix a period "for the payment of Navy Bills in ready money within fifteen "months after their being issued; and instead of allowing no interest "till six months after the date of the bills, (which had been the "former practice) to allow 4 per cent. interest from the time of "issuing. This he was informed by persons well-qualified to judge, "would put an end to the discount on Navy Bills, which had always "in time of War been so disadvantageous to the public."

These were great reforms, and great steps in the path of sound economy; but notwithstanding, the advantages offered by this description of security, such was the high rate of interest borne by money during the years from 1793-1801, that Navy Bills were constantly at a considerable discount.

VII.—*The 18,000,000*l.* of 1st February, 1795.—The condemnation, by Mr. Fox, of the advances made to the Emperor.*

With the year 1795 began the period of greatest difficulty experienced during the whole course of the struggle from 1793 to 1815, in obtaining the loans necessary for the service of the year.

The 4½ millions in March, 1793, was obtained at 4*l.* 3*s.* 4*d.* per cent.; the 11 millions in February, 1794, at 4*l.* 11*s.* 5*d.*, per cent.; but the 18 millions required in February, 1795, was only obtained at 4*l.* 16*s.* 2*d.*, per cent.; and if we include the rate of 7*l.* 10*s.*, per cent., paid for the 4½ millions raised in April and May, 1794, for the Emperor of Austria, under the guarantee of Great Britain (and which, in point of fact, became four years later (1798), a charge on the Consolidated Fund), the average rate of interest paid for the 18 millions was considerably more than 4*l.* 16*s.* 2*d.*; for the terms of that Loan and of the Imperial Loan were in a measure made to support each other.

The Budget for 1795 was introduced on the 23rd of February, and the terms of the loan of Eighteen Millions were then stated, viz., 100*l.* stock, 3 per cent. Consols, 33*l.* 6*s.* 8*d.* stock, 4 Per Cents.; and 8*s.* 6*d.* Long Annuity for 65¼ years, or till 1st January, 1860, for every 100*l.* money, with certain concessions to the subscribers of being entitled to specified proportions of the Imperial Loan.

The Table B in the Appendix will show the relative prices of the different kinds of stocks at the time of the negotiation.

About three weeks previous (5th February, 1795) to the introduction of the Budget, a Message from the King had been sent to the House of Commons, asking for the guarantee of Great Britain to a Loan of 4,600,000*l.*, to be raised in London, on behalf of the Emperor of Austria; and out of that message, and the policy it involved, there arose several important and animated debates.

On Mr. Pitt's motion for an Address, in accordance with the Message, Mr. Fox moved a strong amendment, and the division was 173 to 58. Very few persons would now undertake to defend Mr. Pitt's plan of largely subsidizing foreigners, and it is no part of my present object to go into that question. It must be remembered, however, that there were special difficulties of treaty and otherwise

pressing upon Mr. Pitt, of which we have no accurate means of estimating the proper force.

Mr. Fox was never more formidable than when he argued against the expenditure of English money in remittances to foreigners, of whose good faith and efficiency we had no sufficient evidence; and his speech of the 5th of February (1795), against the Imperial Loan was one of his most striking efforts. He said, "With respect to the general policy of employing foreign troops in this war, he could not help arguing from experience that little reliance was to be placed upon them. The right honourable gentleman (Mr. Pitt) knew how much of the money of this country had been already squandered for such aid; and everybody knew what had been the conduct of our Allies. It had been confessed that there were points in the conduct of Austria difficult to explain. He believed it not only difficult but impossible to explain these points in any satisfactory manner. It was no wonder that the right honourable gentleman declined entering into a detail of conduct, which involved everything that was suspicious. [Mr. Fox then referred to instances]. In the latter part of the campaign it was said that the Austrians acted better. Possibly they might, for then they began to be paid for their trouble; but was it not notorious that the Duke of York was left, at only thirty miles distance, to judge of their intentions by speculations, as he might have done of the intentions of an enemy.—He might be asked, if we did not send these subsidies what should we do? He would answer—Add the money to our naval strength, and depend upon our own exertions, instead of depending on treacherous allies."

The Scrip of the 18 million loan of February, 1795, came out at $1\frac{1}{2}$ -2 premium. In the course of the summer it reached 11 premium, in consequence of a favourable turn in the campaign.

VIII.—*The 18,000,000*l.* of December, 1795.—The Committee of Inquiry with reference to it.*

The Budget for 1796 was introduced on the 7th December, 1795, and it was part of the Ways and Means to raise a second loan of 18 millions.

The terms were 120*l.* stock, 3 per cent. Consols; 25*l.* stock, 3 per cent. Reduced; and 6*s.* 6*d.* Long Annuity; equal on the whole to a rate of interest to the lender of 4*l.* 13*s.* 6*d.* per cent. per annum.

The contract for this loan excited considerable discussion. On the 8th of December (1795), the day after the Budget, a Royal Message was sent to both Houses, intimating his Majesty's disposition to meet any overtures for peace on the part of France, and that announcement, coupled with favourable news from the seat of war, led to a considerable rise in the funds, and in the scrip of the new loan. Mr. Grellier says: "The terms of this loan excited considerable discussion: and it appeared, on an investigation of the business, that it might have been negotiated at 3*s.* Long Annuity per cent. less; but the Minister thought himself under some obligation to accede to the proposal of the subscribers to the last loan. The terms were settled on the 25th November, 1795." At the conclusion of the Budget speech (of the 7th of December) Mr. Pitt

referred at considerable length to the special circumstances which had led him to accord a preference to Mr. Boyd and his party as the contractors for the loan of the preceding February. A petition had been presented to the House by Mr. Morgan and his friends, the party who conceived that they had cause of complaint against the nature of the dealing with Mr. Boyd. The petition alleged, among other things, that the Minister had departed from the plan of open competition. Mr. Pitt's answer was "that the plan of making the biddings an open competition was the plan which of all others he was most anxious to adopt in this as in all former loans. It appeared, however, that no real competition could take place until those who were engaged in the former loan had paid up the money; and it also appeared that it was not usual for any application to be made for payment of a new loan till the former had been completed." After entering into further details Mr. Pitt concluded by saying that "he was sensible that by his conduct in this affair he had exposed himself to much misconstruction. He could only take refuge in his own intentions, and rely with confidence on the candour, the fairness, and the justice of the House."

The topic, however, was taken up with great vigour by the Opposition, and on the 15th December, (1795) Mr. William Smith moved for a Committee to "Enquire into the circumstances of the Negotiation of the late Loan." Mr. Pitt seconded the motion, and thanked Mr. Smith for bringing it forward, stipulating that the Committee should be a Select Committee, and not a Committee of the whole House. On the 9th February (1796), Mr. Smith presented the Report of the Committee, with a great mass of evidence; and proposed to the House as an individual member, forty resolutions of great length, in which were discussed in detail the minute points upon which the whole case of the complainants rested. These resolutions were of course hostile to the Government; but the first of the series is important, as proving that even in the opinion of Mr. Pitt's most decided opponents, the policy up to that time pursued in the negotiation of loans, was not considered to be censurable. The words are "That it appears to this House that the principle of making Loans for the public service by free and open competition, uniformly professed by the Chancellor of the Exchequer, has been very generally recognized as affording the fairest prospect of public advantage." Mr. Smith's resolutions were debated at great length on the 26th February, and negatived by 171 to 23. Many curious details might be gathered from the debate; but I must pass them by, and content myself by observing that the protracted discussions to which the negotiation of the loan in question gave rise, prove very clearly that whatever might have been Mr. Pitt's inclination to extravagance he was not in a position to gratify such an inclination with impunity, in the face of an opposition so watchful and courageous as the party led by Mr. Fox.

IX.—*The Large Funding of Navy and Exchequer Bills in November, 1796.—Failure of the attempt to accomplish the operation in the 5 per cents.*

In November, 1796, a Funding of Navy and Exchequer Bills was

undertaken on a scale more extensive than any preceding operations of the kind. And it appears to have been determined to make this Funding a fair test of the degree of support which the public would give to any attempt to raise money in a high-rate stock. The Bills to be funded were divided into four series, according to certain peculiarities of date, but the average amounts of Stock placed at the *option* of the holders, for each 100*l.* of Bills funded were as follows:—

November, 1796.	3 per Cents.	4 per Cents.	5 per Cents.
	£	£	£
Options Offered	176 stock	138 stock	118 stock
Yielding per cent. } per annum	5 5 0	5 10 0	5 18 0

And as far as can be ascertained the market prices at the time of the operation were as follows:—

November, 1796.	3 per Cents.	4 per Cents.	5 per Cents.
	£	£	£
Market Prices	56	72	86
Yielding per cent. } per annum	5 7 0	5 11 1	5 16 3

Compared with the actual market prices, therefore, the rates yielded by the option in the 3 and 4 per cents. were unfavourable—but in the 5 per cents favourable.

It will be observed also, that a Bonus of 5*s.* per cent. was offered to those who took the 4 in preference to 3 per cents. And of no less than 13*s.* per cent. to those who took 5 per cents. in preference to 3's. With the advantage even of these Bonuses, what were the results? The answer is as follows:—

The total amount of Bills funded was 13,029,399*l.*; and the stock selected by the holders under the options was—

In 3 Per Cents.	£18,438,000	stock	=	85	per cent.
4 " 	870,000	"	=	4	"
5 " 	2,305,000	"	=	11	"
	<u>21,613,000</u>			<u>100</u>	

These figures are exceedingly striking, and seem to prove—by the comparatively trifling amounts taken in 4 and 5 per cents. under circumstances highly favourable to the disposal of funds of that character,—the practical repugnance of the public to deal in descriptions of Stock not in the highest degree marketable at all times, and to any extent.

X.—*Gloomy state of affairs 1796-97.—Loyalty Loan of 18,000,000*l.* in December, 1796.—Its History, Terms, and the Loss entailed by it on the Subscribers. Loan of April, 1797.*

I have now to notice the loan of 18 millions, of December 1796, known as the LOYALTY LOAN.

This loan was obtained under circumstances so peculiar and full of interest, as to raise its subscription from the rank of a mere financial incident, into an event which exercised no small influence on the progress of the War.

At the close of 1796, this country was fast approaching that darkest hour of the struggle the deepest shade of which was reached in the early part of 1797. I will quote the description given in the Annual Register of the state of the country in the last two months of 1796 and the early part of 1797, as the testimony not only of an able and impartial, but of a contemporary authority. The passage runs thus: "While either the imprudence of our councils, or the
"adversity of events, involved a necessity of heavy and even severe
"taxation, other discouraging circumstances accompanied or followed
"this evil in close succession. Difficulty crowded on difficulty,
"danger on danger. On the return of Lord Malmesbury towards
"the close of 1796, from the unsuccessful negotiation at Paris, the
"British funds suffered a greater depression than was experienced
"at any period of the American War. Insurrections prevailed in
"many parts of Ireland, discontents in all. An unexampled run on
"the Bank of England was followed by a suspension of payments in
"specie. A mutiny of unprecedented extent and inveteracy raged
"in the Navy; symptoms of discontent began to appear in the
"Army; the public dissatisfaction and alarm were expressed in peti-
"tions from all quarters for a change of measures if not of ministers;
"and the wild and darkening forest threatened to close around us."

The Session of 1796-97 began as early as the 27th September, 1796, and after the formalities attendant on the opening of a New Parliament had been gone through, the Royal Speech (6 October) adverted, among other topics, to the threat of invasion from France.

On the 18th October, the ministry proposed as a measure of internal defence, a levy, under stringent regulations, of 15,000 men from the different parishes of the country; a supplemental corps of militia of 60,000 men; and a corps of 20,000 irregular cavalry; and it was in the midst of the excitement and discussions following on these proposals, that the annual Budget was presented on the 7th December, 1796.

The deficiency of Ways and Means was stated to be 18 millions, and for that amount Mr. Pitt had made provision by a loan brought before the public in a manner and with a result both extraordinary.

Mr. Pitt appears to have judged, after protracted consultation with the Bank Directors, that to attempt to raise so large a sum as 18 millions, in the then perilous condition of the country, by the agency of ordinary contractors would be an operation of exceeding cost and very doubtful success. It was determined, therefore, to throw the subscription open to the public, and to appeal to the patriotism of the country for support, and it was also determined to raise the money

in Five Per Cent. Stock; and a 5 per cent. stock being selected, it becomes for our present purpose an interesting question, what were the terms offered as likely to be accepted? Those terms were sufficiently onerous to the public. For every 100*l.* money the lenders had 112*l.* 10*s.* stock 5 per cents., dating from the previous quarter-day 10 October, 1796; these 5 per cents. were declared to be irredeemable, unless with the consent of the proprietors, until the expiration of three years after all the 5 per cent. stocks, existing at the date of this loan, should be redeemed or paid off;—with an option, moreover, to the proprietors of the stock of this loan to be paid off at par within two years after the conclusion of a definitive treaty of peace, and in either case of repayment of this loan, the holders to have the right of claiming the repayment either in 100*l.* money, or in 133*l.* 6*s.* 8*d.* 3 per cent. Consols for every 100*l.* stock cancelled.

Even with these stringent safeguards to the lenders against future contingencies, it is quite certain that the loan could not have been raised at the rate offered, viz., 5*l.* 12*s.* 6*d.* per cent., per annum, except under the special circumstances of the appeal to the patriotism of the country. From the very first the undertaking was a source of loss to the subscribers, as far as market value was concerned. For a few days the scrip bore 10*s.* premium; it then fell to a discount of 4—5 per cent., and that discount became no less than 15½ per cent. in March, 1797.

No combination of adverse influences, however, could extinguish the spirit of the nation; and it remains on abiding record as one of the most striking manifestations of the indomitable will of the people of this country, that in the very midst of the threatening cloud of discouragements which pressed upon them on all sides at the close of the fourth year of the war, they responded to the call of the Government for aid, and in the course of fifteen hours subscribed 18 millions to a loan which stood almost then at a discount in the market.

I again resort to the Annual Register for a contemporary description of the enthusiastic manner in which the public responded to the appeal: “Monday, 5th December, 1796.—The following mode of raising the loan of 18 millions was proposed, and recommended by the Bank Directors, on Wednesday last. One million was subscribed by the Bank in their corporate capacity, and 400,000*l.* by the Directors individually; and before the close of the books on the first day (Thursday, 2nd December), 5,000,000*l.* were subscribed by different merchants and others. At ten o’clock this morning. (Monday, 5th December) the parlour doors of the Bank were opened before which time the lobby was crowded. Numbers could not get near the books at all, while others, to testify their zeal, called to the persons at the books, then signing, to put down their names for them as they were fearful of being shut out. At about twenty minutes past eleven the subscription was declared to be completely full, and hundreds in the room were reluctantly obliged to go away. By the post innumerable orders came from the country for subscriptions to be put down, scarcely one of which could be executed; and long after the subscription list was closed persons continued coming and were obliged to depart disappointed. It is

" a curious fact, and well worth stating, that the subscription was
 " completely filled in fifteen hours and twenty minutes, viz., two
 " hours on Thursday, six on Friday, six on Saturday, and one ditto
 " and twenty minutes on Monday. The Duke of Bridgewater actually
 " tendered a draft at sight on his banker for the 100,000*l.* which he
 " subscribed to the new loan, which could not of course be accepted
 " as the Act is not yet passed."

The losses to the holders of Scrip in the loan raised in this manner, and as we have seen on terms apparently so favourable to the lenders, became so great and notorious, that on the 31st May, 1797, Mr. Pitt proposed to Parliament to afford them relief to the extent of adding 7*s.* 6*d.* Long Annuity to the terms already granted, an addition which would have raised the immediate rate of interest to 6*l.* per cent. per annum.

In urging this proposition, Mr. Pitt said that the subscribers to the Loan "were to be considered as persons who came forward to aid the public service without personal advantage, *for there was no chance in their favour at the time*; they must have viewed it as a transaction in which they were likely to lose rather than to gain, and the burthen of that loan was considerably less than it must have been had they not come forward in the way they had done. *The loan was 4 per cent. discount before the payment of the deposit; the discount afterwards rose to 7, 8; and was now at 14 per cent.* The subscribers had, however, made good their several payments, a circumstance which would not the less dispose the House to assist them." Mr. Pitt's motion was carried by 40 to 26; but when the report was brought up next day (1st June), the division was 36 to 35—and the proposition was then dropped.

I may add, that the short Peace of Amiens enabled some of the holders of the stock of the Loyalty Loan to claim repayment under the terms of the Act, and some little embarrassment to the Chancellor of the Exchequer was created in consequence.

The last of the Eight Cases selected for particular reference (see page 10, ante) is the Loan of 14,500,000*l.* raised in April, 1797, at a rate of interest equal to 6*l.* 7*s.* per cent. per annum,—the highest rate paid for any of the loans which have been raised in this country since the American war.

The funds selected were 3 per cent. Consols, 3 per cent. Reduced, 4 per cents., and a Long Annuity of 6*s.*; and after the statements already made on the subject of the difficulties of the country at the period of this loan I may be allowed perhaps to say in general terms, and without adducing details, that onerous as the terms were, they were the best that could be obtained by exciting a competition among responsible parties.

XI.—*General Conclusions, justified by the foregoing details.—Those conclusions are in favour of Mr. Pitt.*

It will probably be considered that the details I have now concluded with reference to Eight of the Loans raised by Mr. Pitt, afford very strong evidence in support of the Three First of the Five propositions which I began by stating.

These three propositions were in substance, (1) That, from the

practical difficulties of the time, the amounts required by way of loan could not have been obtained at the periods, and in the large sums required, if the principle of borrowing at Par had been rigidly enforced: (2.) That even if the principle of borrowing only in Five Per Cents. had been enforced the difficulties would have been almost insurmountable, and the terms in all cases exceedingly more onerous than the rates actually given: and (3.) That there is no reason whatever for supposing that the contracts entered into were not the best that could be obtained by a resort, as far as possible, to the check of competition; and that, in point of fact, repeated attempts were made by Mr. Pitt to negotiate the loans in stocks bearing a higher rate than three per cent.

To the remaining Two of the Five propositions, namely, (4.) That the situation of the country rendered it necessary to keep down the annual burdens as far as possible: and (5.) That particularly during the first six years of the war (1793-98), as large a revenue was raised within the year as could be obtained under the exigencies of the time,—I will presently address myself.

I have said that practically it would have been impossible to have raised the loans under consideration at Par; and although that phrase will convey a sufficiently distinct meaning to persons familiar with these inquiries, it may be well to introduce here a definition, and it shall be in the words of one of the most distinguished supporters of the Par Method.

Borrowing at par then means “to restrict the stock created in the lenders’ favour to the amount of the loan, and to make the required bonus (or inducement to persons to subscribe) by raising the rate of interest” (McCulloch’s Funding System, p. 435):—Or, to give an illustration,—to have as many different kinds of stocks as there have been different rates of interest paid on different loans:—As for instance the $4\frac{1}{2}$ millions raised in March, 1793, would have been a special 4*l.* 3*s.* 4*d.* per cent. Stock;—the 11 Millions of February, 1794, would have been a 4*l.* 11*s.* 5*d.* stock;—the 18 millions of February, 1795, a 4*l.* 16*s.* 2*d.* stock,—and so on through the fifty funding operations of the last war. It is happily not my task to defend a theory which assumes the contemporaneous existence of half a century of different kinds of public securities; but if borrowing at Par has any definite meaning at all, such would have been its practical effects if enforced from 1793 to 1815.

A medium course between borrowing at par—that is, always at the market rate of interest at the time—and borrowing in 3 per cent. stock,—would have been to borrow in a High Rate Stock, such as the Five per cents. As regards most of the loans a Five per cent. stock might have been employed, but at the expense only of a considerably higher rate of interest than was paid in the Low Rate Stock of 3 per cent.; and for all the purposes of trying the question of low and high rate methods of funding, during the period 1793-1801, it seems to me that we may safely disregard the Par hypothesis, as being too far removed from any possibility of adoption, or even endurance, and confine the question to the respective merits of the THREE and FIVE per cent. Methods.

XII.—*The Difficulties which prevented large taxation, 1793-1798. Rapid succession of Bad Harvests. — Great efforts made.*

Let us now return to the two last of the five propositions.

It has been said that a much larger amount of taxes ought to have been imposed immediately on the outbreak of the War; and, therefore the necessity for loans so large prevented by considerable additions to the ordinary revenue. I candidly confess that, when I began this inquiry, I held, not perhaps a strong but a moderately distinct opinion, in favour of this view; and I must also confess that an investigation into the facts has compelled me to relinquish that opinion altogether.

This is not the proper occasion on which to go at length into so large and general a topic. At present it is a topic which occurs in a form collateral only to the main purpose of this Paper, and therefore I propose to do no more than refer to it incidentally.

The primary consideration in viewing such a question is the character of the Seasons, and the price of Corn; and the following statement, compiled from Mr. Tooke's History, will show the rapid succession of Unfavourable Harvests between 1792 and 1800.

Harvest of	General Character of Crop.	Average Price of Wheat in England per Winchester Bushel (8 bush.) Qr. during Harvest Year of 1st Sept. to 1st Sept.
		£ s. d.
1791	Very abundant.	
1792	Extremely wet summer. <i>Wheat crop very inferior.</i>	
1793	Summer very dry. Winter corn moderately good, but <i>spring corn generally deficient.</i>	'93-'94 — 2 10 2
1794	Summer hot and forward. <i>Great damage occasioned by drought.</i>	'94-'95 — 3 5 5
1795	Winter of 1794-95 very severe. Spring and summer of 1795 cold and stormy. <i>Produce very deficient.</i>	'95-'96 — 4 4 .
1796	Winter of 1795-96 very mild. Harvest of 1796 abundant and well secured.	'96-'97 — 2 14 4
1797	Season on the whole unfavourable, and <i>produce deficient.</i>	'97-'98 — 2 13 6
1798	Crops moderately productive and secured in good order.	'98-'99 — 2 15 3
1799	Winter of 1798-99 extremely rigorous. Spring and summer of 1799 cold and ungenial. <i>Produce exceedingly deficient</i>	'99-'00 — 5 6 .
1800	Spring very wet. Summer hot. Harvest weather at first favourable; but as the general result more than half the crop deficient or severely damaged.	'00-'01 — 6 11 .

We have here Six Deficient Harvests in the first nine years of War, viz., 1792, '93, '94, '95, '99 and 1800, and in Appendix H further details are given of the sacrifices which these deficient years imposed upon the country.

The dearth was perhaps the more severely felt, because it came upon the country as something of which there had been no recent example. To the end of 1790 this country had required hardly any supplies of corn from abroad, and had had the benefit of an extremely low average price. For the twelve years to the end of 1792 the average annual price was not more than 2*l.* 8*s.* per quarter for wheat;—for the first three years of the War (1793-1-5) the price was 3*l.* 7*s.*, or forty per cent. higher; for the next five years (1796-1801) the price was 4*l.*, or seventy per cent. higher. There was a constant drain also for the cost of foreign supplies of corn. For the years 1791-5 the Import Cost of Foreign Corn was Two Millions and a Half sterling; for the five years 1796-1800 it was Three Millions and a Quarter sterling, or not far short of 10 per cent. of the total real value of all the Imports. Not only were the ports thrown completely open, but large bounties were paid on cargoes of corn imported. In the fourth year of the war (1796) the amount paid for bounties was 574,000*l.*; in 1801 it was 1,420,000*l.* It was the intense distress, arising out of the scarcity, which mainly led Mr. Pitt to propose early in 1796 those extensive modifications of the Poor Law which during recent years have been so largely discussed.

We have already seen that the War opened amidst severe commercial distress, and during the first three or four years of the struggle the effect of the utterly disorganized state of Europe operated to the great depression of the trade of this country. When our Naval victories had cleared the seas of almost every hostile flag; and when the colonial conquests had given us a monopoly almost of the trade of the world; that monopoly, aided by the rapid extensions of our manufacturing industry, drew into this country no small part of the wealth of Europe; but we did not possess these advantages till after 1798, and during the First Six Years of the conflict the Ministry had to contend with an accumulation of difficulties, such as, I believe in my conscience, had never been encountered before, and such as assuredly, has not been encountered since.

Famine, disaster in the field, treacherous allies, the failure of two attempts to obtain peace from an arrogant enemy, discontent and rebellion in Ireland, a paralyzed commerce, a failing revenue and increasing burdens; a tendency if not to sedition at least to the most violent forms of political agitation at home, and a Parliamentary Opposition—distinguished above all others in the history of party by the ability, the courage and the perseverance of its leaders—vehemently antagonistic to the war and to the Minister who carried it on. These were the difficulties under which Mr. Pitt persevered; and now, at the distance of sixty years, when the embers of the fierce opposition he had to meet have long since died out, we can all afford to admire the brave and hopeful spirit with which he, and the great majority of the nation who supported him, met the hardships that pressed upon them. We can also well afford to admire the gallantry of the small band, who, thinking too favourably of the principles and power of France, fought for six years a hopeless battle against the policy of the War.

But it is by no means true that vigorous efforts were not made to increase the taxes even from the first.

In Appendix K will be found a detail of the Budgets proposed by Mr. Pitt from 1793 to 1801, and it is a document to be read with interest and profit. The New Taxes proposed at the end of the first twelvemonth (5th February, 1794) amounted to no less than 913,000*l.*; the following year they were 1,666,000*l.*; in 1796 they were 1,592,000*l.*; and even in the deep gloom of the December of that year (1796), the minister had confidence enough to propose further new taxes to the amount of 3,436,000*l.* We must remember also that in the early part of 1796 he had been compelled to withdraw his proposed Legacy Duty on Real Estate. In 1798 came the Trebled Assessed Taxes, the Redemption of the Land Tax, the Voluntary Contribution, and other imposts and plans amounting to 8,263,000*l.*;* and, at length, in 1799 that great and final measure, long in contemplation but not possible at an earlier period, the Income Tax (of 10 per cent.), estimated to produce 7,500,000*l.*

XIII.—*Great Influence produced by false calculations of the weakness of the Enemy, and by false reliance on the Sinking Fund.—Testimony of Mr. Burke and Lord Grenville.*

There were two circumstances, however, which during the earlier years affected materially the Financial Plans of Mr. Pitt, as regarded the War Expenditure; and one of those circumstances continued to affect the policy pursued with reference to loans even beyond the termination of the contest in 1815.

The first of these circumstances was (1.), The general opinion entertained when the War broke out that it was merely a casual interruption of peace, and would soon terminate; and this opinion was very confidently supported on the two grounds, first, of the utter inability of a chaotic government, such as existed in France, to carry on an external war with vigour; and, secondly, of the rapidly approaching exhaustion in France of every species of financial credit and stability. (2.) The second circumstance was the delusive belief in the efficacy of the Sinking Fund to save this country from the perils of an accumulating Debt.

I cannot go into much detail on either of these topics, and I must content myself by the general allegation, supporting it by only a single extract from Mr. Pitt's speech, on the Address of 30th December, 1794, and confining myself to a few sentences of the passage in which he expressed his confident belief in the approaching exhaustion of the finances of the enemy: "I have even," he said, "the authority of Tallien for saying that the French cannot maintain their Assignats without contracting their expenses and diminishing their forces; and it should be recollected that this is their only resource. Is it then too much to say, that their resources are nearly at an end? It is this unlimited power, which the French

* It was, if I remember rightly, with reference to the Treble Assessed Taxes, that one of the most vigorous and popular of the opposition songs was composed. The following stanza was exceedingly popular:—

What were the taxes last year?
A trifle that we can remember;
Enough to make a man swear
From January until December.

“ Convention have assumed, to purchase or to seize all property as suited their purposes, that accounts for the stupendous scale of operations which they have been enabled to pursue. This circumstance completely solves the phenomenon, which otherwise would appear so inexplicable and is adequate to all those miraculous efforts which have attended the progress of the French Revolution. and which seemed to baffle all reasoning, as much as they have exceeded all human expectation. In all these circumstances, we have then sufficient inducements to carry on the war, if not with the certainty of faith, yet at least with the confidence of expectation.”*

These views were by no means confined to Mr. Pitt, they were entertained by most well informed persons in the early part of the War; and, in the opening pages of that last, and in many respects, most marvellous of the writings of Mr. Burke, the *Letters on a Regicide Peace*, published towards the end of 1796, we may read a statement—in language such as Mr. Burke only could command—of the state of public opinion, with reference to France after the abolition of the monarchy in August, 1792: “Deprived,” the passage in the First Letter runs, “of the Old Government, deprived in a manner of all Government, France fallen as a monarchy, to most speculators appeared more likely to be an object of pity or insult, according to the disposition of the circumjacent powers, than to be the scourge and terror of them all; but out of the tomb of the murdered monarchy in France has arisen a vast, tremendous, unformed spectre, in a far more terrific guise than any which ever yet overpowered the imagination and subdued the fortitude of man. Going straight forward to its end, unappalled by peril, unchecked by remorse, despising all common maxims, and all common means, that hideous phantom overpowered those who could not believe it was possible that France could at all exist—except on the principles which habit rather than nature had persuaded them were necessary to their own particular welfare, and their own ordinary modes of action.—The Republic of Regicide with an annihilated revenue, with defaced manufactures, with a ruined commerce, with an uncultivated and half depopulated country, with a discontented, distressed, enslaved, and famished people, passing with a rapid, eccentric, and incalculable course from the wildest anarchy to the sternest despotism, has actually conquered the finest parts of Europe; has distressed, disunited, and broken to pieces all the rest; and so subdued the minds of the rulers in every nation, that hardly any resource presents itself to them except that of entitling themselves to a contemptuous mercy by a display of their imbecility and meanness.—At first the French force was too much despised, now it is too much dreaded. Inconsiderate courage has given way to irrational fear.”

There was then the hallucination of the Sinking Fund—and surely the history of that device affords materials for one of the most curious

* Tom Paine’s tract, “*The Decline and Fall of the English System of Finance*,” dated at Paris, 8th April, 1796, was intended as an answer to Mr. Pitt’s frequent references to the desperate situation of the credit of the republic. The motto of the pamphlet, “On the verge, nay, in the gulph of bankruptcy,” was taken from one of Mr. Pitt’s speeches.

chapters in the chequered narrative which traces the progress of the human mind in freeing itself from gross and mischievous errors. Eastern legends have hardly ventured upon any more startling paradox than the enthusiasm of all the leading minds of a commercial nation in support of a plan arithmetically absurd, and bringing with it no immediate advantage, but on the contrary, the continuance of present imposts exceedingly hard to be borne. From the date, however, of the Sinking Fund Act of 1786 to the final adoption of Dr. Hamilton's views by Parliament in 1828, the scheme revived by Dr. Price continued in the punctual discharge of its useless functions—and during the first half of that period the most implicit reliance was placed in the power of the contrivance to mitigate the evils of accumulating debt. The diffusion of this financial faith pervaded all parties. It was held as firmly on the Opposition as on the Ministerial side of both Houses. It pervaded all the pamphleteers; and we search in vain through the fierce essays of Mr. Morgan and Lord Lauderdale for any expression of doubt as to the solemn duty of upholding the Sinking Fund. In truth, the support of that institution by Mr. Pitt was almost the solitary merit which the Opposition admitted him to possess.

It is fortunate, however, that we are able to refer on this subject to the testimony of one of the most distinguished of the statesmen who contributed to the original adoption of Price's Scheme, and who also lived to contribute, with no backward zeal, to the correction of the error. In the admirable essay* published by Lord Grenville in 1828, there is the following passage:—

“But in the days of Price the principles of 1716 regained the public favour, and in 1786 they were re-established by almost universal acclamation as the main bulwark of our finance, and the unfailing sources of incalculable benefit. To this change the circumstances of the moment powerfully contributed. At the close of the American War the loss of our long-cherished colonies, to whose possession such false notions of advantage had been attached, the magnitude of the debt incurred in that fruitless contest, and the deficiency of the revenue created to defray its charge, had thrown over our financial prospects a cloud of distrust and apprehension scarcely to be imagined but by those who witnessed it. Nor were there wanting strong grounds for these impressions, exaggerated as they were. The real pressure of our burdens was at that time exceedingly severe; more grievous, perhaps, in proportion to our wealth, than in any succeeding period of our greatest difficulties. The nation gave way therefore to an almost universal panic on this subject. The ordinary course of our finance was thought no longer adequate to our necessities; resort must be had for safety, it was said, to some new, or at least to some long untried, expedient.

“Under these circumstances it was that the project of establishing a new Sinking Fund, which should accumulate uninterruptedly at compound interest, through every vicissitude of peace and war, and which on that assumption would be demonstrably capable of

* “*Essay on the Supposed Advantages of a Sinking Fund,*” by Lord Grenville, 1828. The pamphlet is dated Drogheda, 15th March, 1828, and was published in a somewhat incomplete state in order to be ready early in the session of that year.

“ being carried to any assignable amount, captivated all imaginations. “ The country grasped, almost without inquiry, at promises of relief “ so specious and so ample, adopting with unbounded confidence a “ remedy proclaimed on no light authority to be of efficacy nothing “ less than omnipotent.

“ It can be no reproach to any individual to have partaken largely “ in these feelings—no reproach, I trust, to any public man to have “ co-operated with earnestness and zeal both in preparing and sup- “ porting a measure so consonant to the wishes of his country; and “ least of all can censure be attached, on this account, to that able “ and excellent Statesman who framed and carried through the Act of “ 1786. Allowing for the impressions at that time so generally pre- “ valent, there is, on the contrary, much of his conduct on that occa- “ sion for which he is justly entitled to the highest praise. With “ an ardent and generous spirit, devoting all his energies to the “ national prosperity, he risked, and in no small degree surrendered, “ his highly valued popularity to the necessity of a large additional “ taxation, which that measure compelled him to establish and main- “ tain. This was no light sacrifice, nor did he feel it such; but he “ anticipated, in return, with unspeakable delight, the full tide of “ wealth, which in some distant, but auspicious moment, the results “ of these disinterested exertions were to pour upon his country. “ What he so ardently wished he willingly believed. *His persua- “ sion of the great advantages of a Sinking Fund, to be continued in “ War, and to be upheld by borrowing in all periods of deficiency, was “ therefore deeply rooted; not in his judgment only but in his feelings.* “ To these opinions he clung with unvarying fondness; and his “ provisions for giving effect to them, although, on more than one “ occasion widely departed from by his successors, still form, even “ in the present moment, the leading features of the system, in so “ far as it can still be said to exist at all.”

XIV.—*Statement of the Question as regards the Comparative Eligibility of contracting Loans in Low Rate or High Rate Funds.*

I have now reached the closing division of the inquiry.—I have endeavoured to adduce, at least some reasons for believing that the great and perplexing difficulties of the period from 1793 to 1801 compelled the Government to frame its financial measures very much according to the current circumstances of the time; and that, as regards the Loans raised by Mr. Pitt, they were raised with the advantage of every precaution on his part to accept such terms only as arose in each case out of a competition the most extensive and *bonâ fide* which it was possible to excite.

The general and conclusive answer therefore to those persons who exclaim against the onerous burdens entailed by Mr. Pitt's Loans is exceedingly short, and consists in a simple statement of fact, namely, —that the Loans were required for purposes of national defence, in a period of great distress and peril, and that, with every advantage of an open market, the money could only be obtained at the prices given. —Whether or not therefore the burden arising out of these transactions be or be not onerous, is a consideration wholly beside the question. The bargain was fairly performed on the side of the Lender—

and, unless the doctrines of repudiation are to be introduced, it must be as fairly performed on the side of the Borrower.

And here the defence of the Funding Operations of the first French War might cease, as being complete on the first and paramount ground of the particular facts. The Loans were raised in the openest manner, and on the best terms that could be obtained,—and there is an end of the whole case.

But the defence admits of being carried further than this.—The impugners of Mr. Pitt's Loans are willing to admit—some of them entirely, and others only as an assumption,—that while there was no extravagance in the manner of settling the contracts, there was a great error of judgment in selecting as the fund to be employed a Three per cent. or Low Rate Stock instead of a High Rate Stock—meaning by High Rate Stock either Five Per Cents. or funding at Par. Now, as I have already said, it appears to me that while the Par Method may be exceedingly ingenious as a hypothesis, it is too far removed from possible reality to admit of discussion; and further, that the question can only be fairly tried as between *Three* and *Five* per cent. stock.

I am quite content to discuss it on this ground, and I think it may be made to appear, by a fair and reasonable line of argument, that in spite of all the manifold statements to the contrary, the loans raised by Mr. Pitt in the Low Rate Stocks, have *not* entailed upon the country the heavy losses with which they have been so constantly charged.

No small part of the misapprehension which prevails in the arguments on these subjects is traceable to what appears to be a very singular oversight, as regards the real nature of the Market, in which the Public Funds are the principal commodity dealt in; and as to the real nature of the majority of the great operations which are carried on in that Market.

We are frequently reminded, and no one disputes the fact, that the National Debt consists not of Capital but of Perpetual Annuities. The State has bound itself to pay certain half yearly annuities, and has deprived the holders of these annuities of any right to call for their redemption; hence, it is argued, and on abstract grounds very justly, that the only point which the public and the stock jobbers have to consider is the precise arithmetical relation between the value of different amounts of annuity;—and it is said that any marked preference of relative price borne by an Annuity of 3 over one of 5 per cent. is a departure from obvious rules, so gross as to be almost ridiculous. From these premises follows, quite logically, the conclusion that the State must of necessity be a large loser when it is so misguided as to borrow in 3 per cent. instead of 5 per cent stock;—inasmuch as while the 5 per cent do, the 3 per cent. do not, admit of future reduction. And this liability to the reduction of the annuity is the only qualifying circumstance which the doctrine admits. It is allowed “That all the funds are redeemable at par, and that if the 3 per cents. rose to 75, the 4 per cents. should rise to 100, and the “5 per cents. to 125; and, therefore, the actual price of the 4's or “5's could never much exceed par. So soon as the 5 per cents. rise “above par, the financier will offer payment, and by doing so induce “the creditors to submit to a reduction of interest. *The holders of*

“(a) a 3 or 4 per cent. fund have thus a prospect of gain by the rise of value, in which the 5 per cent. stockholders do not participate; and in like manner when the 3 per cents. rise above 75, the holders of that stock have a further gain, in which the 4 per cent. stockholders do not participate. In consequence of these expectations, the price of 4 per cents. is higher compared with that of the 5 per cents.; and the price of the 3 per cents. higher than that of either of the others; than the proportion of the rates of interest;—and loans are transacted in 3 per cents. on easier terms. The lender expects to gain by the rise of the stock, and what he gains the public loses at repayment or redemption.”*

These are the clear words of Dr. Hamilton, and it is not a little curious, that while his strong and lucid mind detected all the plausible fallacies of the Sinking Fund, it should have overlooked, not merely the obvious, but the constantly practical operation of those differences between Three and Five per cent. stock, and which he has so distinctly stated in the paragraph quoted.

XV.—*The Strong Practical Considerations in favour of preferring Consols, or a Low Rate Fund.*

In considering the abstract doctrine just described, we are met at the outset with the fact that the great mass of the business on the Stock Exchange consists, not of the purchases and sales of *bonâ fide* investors, but of the continued operations of speculators in the rise and fall of prices during what is called the ‘Account.’

Whether for good or evil ends, but certainly on the whole for good ends, the Stock Exchange is a vast market where men employ masses of capital in dealing backwards and forwards in the different Stocks; and, like all other great markets, custom, convenience, and self-interest have gradually set up certain conditions which govern in a great measure the movements of the whole body of operators. One of the best established of these conditions is, that any new kind of stock, attempted to be introduced with success, must be *marketable* at all times and to any extent. It must be of a nature which every body understands—it must be free from new conditions—and it must be also free from future contingencies in the estimation of which hardly two persons will agree. Now, it is the fact, that for the last hundred years the 3 per cent. Consols have been the kind of fund which, beyond all others, has fulfilled these conditions of eligibility in the most pre-eminent degree. From the circumstance of the amount of the funded capital of this Stock always greatly exceeding in magnitude the funded capital of any other kind of stock, Consols have admitted of speculative operations being carried on in them far beyond anything that could be prudently undertaken in any other Fund; and hence it has followed, that from the nature, and habit, and constitution of the Stock Market, 3 per cent. Consols have relatively been worth more to the dealers in that market than any other kind of stock; and the higher relative price so existing, however ridiculous it may appear to abstract reasoners, is a price perfectly legitimate on all grounds of dealing. And one of the main reasons of the preference for Consols, after allowing for the mag-

* “Hamilton’s Inquiry,” 3rd edition, 1818, p. 250.

nitude of the fund, *has always been their exemption from embarrassing hazards of future redemption*—particularly as they have the great safeguard of a year's notice being necessary before the holders can be compelled to accept payment at par.

It has been alleged in the course of discussions which have taken place on these subjects, that an obligation on the State to redeem only at *Par* has been too lightly conceded to the contractors of loans, and that, by the exercise of a little more care and skill, terms of redemption much more in favour of the public could have been secured.

As far as I am aware, however, these are allegations wholly of a theoretical nature, and resting on no solid ground of experiment or experience; but, in point of fact, attempts have been made to raise loans in Consols, and other kinds of stock, with an option to redeem at some price *under* par; and we have the distinct testimony of no less a personage than Mr. Huskisson, that when an attempt of this nature was made by himself, (while in office as Secretary of the Treasury from 1806 to 1808, under the Duke of Portland's government,) it was found to be totally impracticable. No responsible set of persons would *make any bid whatever* under such conditions. Mr. Huskisson stated the fact as follows, in his speech of the 3rd March, 1813, on the state of the Finances: "*The price of the public stocks does not depend upon the value of the dry annuity. It is a joint consideration of this annuity and of the prospect of an increase in the value of the nominal capital, that operates upon the mind of the purchaser. I had a pretty strong proof of this when I myself was in office. From a wish to guard the public against the great loss of redeeming, perhaps at par, 3 per cents., which might have been borrowed at 60, I proposed to the bidders for the loan to make the 3 per cents. redeemable at 80,—and they would not bid at all upon the proposal.*" At the time when Mr. Huskisson offered this limit of 80, the 3 per cents. were under 60, and a margin of 33 per cent. upon a price of 60 was no small allowance, and yet the contractors would not listen to the suggestion;—and for reasons perfectly sufficient, on grounds both of individual interest, on their part, and of general advantage as regards the public; for it is certain that the higher value borne by Consols, in consequence of the absence of embarrassing conditions, has been a source of great convenience, and of no small profit, to the State in its operations of finance.

The fact is, therefore, that from the operation of the two causes which have been named, viz. (1.) of the pre-eminent eligibility of Consols as a Stock Exchange commodity, and (2.) of the extreme non-eligibility of High-Rate Funds as a Stock Exchange commodity, the actual difference of price between Consols and Five per cents., as the media of New Loans, has been generally so great as to make it prudent and profitable to adopt the Low-Rate method.—And specifically this was the actual fact during the first French War.

XVI.—*Comparative Results of the Two Methods as applied to the Ten Largest Loans, 1793-1801.*

Nor is it true, as Dr. Hamilton implies, that what the holder of 3 per cent. stock gained by a rise in its price, the public wholly lost.

For there were the accumulations of the Difference of the Smaller

annual charge, arising out of the smaller interest paid on loans raised in Consols, as compared with the Larger annual charge, which must have been paid on the same loans if they had been raised in Five per cents.

And we shall find in the accumulations of this Difference of Annual Charge almost a complete set-off against the excess of the amount of capital in created Consols, beyond the amount of money actually obtained.

In the following Table I have collected the Ten Largest Loans raised between 1793 and 1807. In the second column is inserted the rate of interest actually paid in low-rate stocks; in the fourth column, the rate at which, from a careful consideration of the circumstances of each case, I am led to believe must have been paid if the money had been raised in Five per cents.: and then working out, as shown in detail in Appendix N, the Difference of annual charge thence arising, the result as *For* or *Against* the Five per cent. method, as shown in the fifth and sixth columns.

LOANS, 1793-1801.—*Summary of COMPARATIVE RESULTS of the TEN LARGEST LOANS as actually raised in LOW RATE Stocks, and as they would have been raised in FIVE per Cents.**

1.		2.		3.		4.		5.		6.	
Actually Raised.				LOANS AND DATES.				Estimated Average Rate if raised in FIVE PER CENTS.		Result For and Against FIVE per Cent. method as on 1st Jan., 1826.	
Money.		At Average Rate.						Against.		For.	
£	£	s.	d.			£	s.	Stock. £	Stock. £		
4,500*	4	3	4	I. LOAN, 1793 (Mar. 11th)		5	2	4,406	....	
11,000	4	11	5	II. „ 1794 (Feb. 5th)		5	5	2,560	....	
18,000	4	16	2	IV. „ 1795 (Feb. 23rd)		5	10	6,962	....	
18,000	4	13	6	VI. „ „ (Dec. 7th)		5	7	3,792	....	
7,500	4	12	6	VIII. „ 1796 (May)		5	10	3,696	....	
13,029	5	7	11	X. NAVY BILLS, 1796 (Nov.)		6	5	4,900	....	
14,500	6	7		XII. LOAN, 1797 (April 26th)		7	2	1,290	....	
17,000	6	4	11	XIV. „ 1798 (May 1st)		7	2	1,584	....	
15,500	5	5		XVI. „ 1799 (June 7th)		5	18	....	1,385		
20,500	4	14	2	XVII. „ 1800 (Mar. 10th)		5	7	....	549		
139,529	5	3	3			5	18	29,190	1,934		
								27,256			

* The 000's at the unit end of the larger amounts in Table are omitted. Thus—4,500 is 4,500,000l.—As stated in the next page, the calculations, of which this Table is the summary, have the concurrence of Mr. Hendriks, who, as Actuary of the Globe Insurance, is the colleague of myself in my capacity of Secretary to that Company.

This Statement gives a result of 27,256,000*l.* in *favour* of the Low Rate Method at the commuted date of 1 January, 1826, taking 6 per cent. as the rate of assumed interest, and making due allowance for the operation of the amount of Long Annuity, involved in the several cases. The details in Appendix N will show fully the mode of arriving at these results, and as they have the concurrence of Mr. Hendriks, whose skill and soundness as an Actuary requires no praise of mine, they may be accepted with confidence. Views may differ as to some elements of the calculation, and for the reconciliation of such differences no conclusive test can be laid down. For myself, I have endeavoured to exhibit the case fairly, and I have a confident persuasion that if the statement contains errors of exaggeration on one side, it contains errors of an opposite kind on the other.

These explanations being given, we may now introduce the following Summary of the comparative results of the Low Rate and High Rate methods, as connected with the Ten Largest Loans raised by Mr. Pitt:—

Statement of the COMPARATIVE RESULTS of the TEN LARGEST LOANS, 1793-1801, as actually raised in LOW RATE Stocks, and as estimated in FIVE per Cent. Stocks.

I.—As AT DATES WHEN raised, 1793-1801.

<i>Five per Cent. Method Estimated.</i>	Elements of Comparison.	LOW RATE, or ACTUAL METHOD.
<i>£</i>		<i>£</i>
139,529,000	Sum Actually raised in Money	139,529,000
164,496,000	Funded Capital (or Stock) created	224,082,000
118	Quantity of Stock given for each 100 <i>l.</i> Money	160 5 0
5 18 0	{Average rate of interest paid to lender, including, as regards the <i>Low Rate</i> Stock, the Long An- nuity granted	5 3 3
8,222,000	Amount of Annual Interest on Stock Created	6,894,000
....	Long Annuity till 5th January, 1860	312,000
8,222,000		7,206,000

II.—As ON 1ST JANUARY, 1826.

<i>Five per Cent. Method Estimated.</i>	<i>Elements of Comparison.</i>	<i>LOW RATE, OR ACTUAL METHOD.</i>
<i>£</i> 164,496,000	Stock in <i>FIVE per cents.</i> assumed as Originally created.	<i>£</i>
94,293,000	{ Add,—for the accumulation of the Difference of 1,016,000 <i>l.</i> per annum between the <i>larger</i> sum of Annual Interest payable on <i>FIVES</i> , and the <i>smaller</i> sum payable on <i>LOW RATE</i> Stocks.	
258,789,000	{ Total amount of Debt as on 1st January, 1826, on <i>FIVE per cent.</i> method.	
	Stock at <i>Low Rates</i> (actually), originally created	224,082,000
	Add, for Funded Capital, equivalent to the charge of the Long Annuity of 312,000 <i>l.</i> as on 1st January, 1826	7,446,000
		231,528,000
	Surplus in <i>Favour</i> of the <i>LOW RATE</i> method	27,261,000
258,789,000		258,789,000

I am quite aware that, in many quarters, a strong opinion is entertained to the effect, that even from the commencement of the War in 1793, a very considerable portion of the Loans could have been raised, not only in Five per cents., but if it had been so desired even in Terminable Annuities; and that funding operations conducted in Terminable Annuities, would have involved only a slight addition to the terms actually paid in 3 per cents.

Upon mere financial grounds a public loan contracted in Terminable Annuities is, perhaps for the State, the form of borrowing the most desirable, for at the lapse of the term the annual burden of the debt ceases. But connected with the plan of Terminable Annuities, there are other considerations of a higher and more general nature than those of mere finance; and when the whole question has to be discussed, it will appear, I think, that while Terminable Annuities may be employed with advantage as one of several forms of funding, it would be exceedingly unwise to resort to them as the sole, or even as the principal method.

As concerns the Loans of 1793-1801, it will be evident from the facts contained in different parts of the Appendix, that the depreciation of Long Annuities, as compared with Consols, was always so great as to render it practically impossible to have selected Long Annuities as the predominant stock in which to seek for eligible tenders. In May, 1798, for example, Long Annuities fell to a price of 13 years' purchase, yielding a rate of 7*l.* 12*s.* per cent., while Consols were yielding only 6*l.* 5*s.*; and while, further, Long Annuities themselves had been quoted at 21½, in March, 1793, yielding 4*l.* 10*s.*

against a then contemporary price of Consols which yielded 3*l.* 18*s.* And generally we are fully justified by the evidence, in concluding that if it was not only unprofitable, but on many occasions absolutely impossible for Mr. Pitt to raise the loan in Five per cents. ; it would have been still more unprofitable, and still further removed from possibility, to have attempted to raise the same sums exclusively or mainly in Long Annuities. I am quite aware that as a matter of mere calculation, nothing is more easy than to show that a Long Annuity is a species of investment as eligible as Consols. Still the practical answer must be that they are commodities not suited to the market, and only to be sold there at a depreciated price.

XVII. — *The same Comparative Results as regards the Loan of 8,000,000*l.* of March, 1847.*

Nor is at all true that the great practical depreciation of High Rate, as compared with Low Rate Stocks was confined to the period of the last War. The causes which led to that depreciation are even in more active existence now than they were then; and I cannot better illustrate this statement than by referring to the terms of the very last Loan raised in this country—the Loan, namely, of 8,000,000*l.*, raised in Consols by Sir Charles Wood, in March, 1847, for the purpose of meeting the extraordinary expenses of the Irish Famine. And we shall find, on examining the terms of that transaction, that notwithstanding the very severe criticisms which were directed at the time against the method actually pursued of borrowing in Consols, the adoption of that course admitted of very ample justification.

The Loan was concluded with Messrs. Barings, and Messrs. Rothschilds on Monday, the 1st March, 1847. On Saturday, the 27th of February, the price of Consols was 90½; and of 3¼ per cents. 92½; and as will be remembered these 3¼'s were the intermediate stage between the 3½'s reduced in 1844, and the ultimate reduction to 3 per cent. in 1854. The 3¼'s, therefore, were the Stock of highest denomination then in the market. The terms of the Loan were 89½ *money* for 100*l.* Consols Stock; or what is the same thing 111¼ Consols Stock for 100*l.* Money; and the rate of interest was 3*l.* 7*s.* Now saying nothing of 5 per cents. as being a stock almost obsolete, let us suppose that Government had been desirous of raising the Eight Millions in a 3½ per cent. stock, so as to have the advantage of reducing the interest at some future time—then we cannot suppose that in a 3½ per cent. fund the biddings would have been higher than 93;—or 107*l.* 10*s.* stock for every 100*l.* money—or 3*l.* 15*s.* 3*d.* per cent. per annum.

Opinions will differ as to the period within which a 3½ per cent. stock could have been reduced to 3 per cent. Assume, however, that that period would have been fifteen years. Then as shewn in detail in Appendix O, the accumulation during fifteen years of the annual saving (of 32,916*l.* per annum) of interest in favour of the Consols-Method, would have amounted to 434,000*l.*, and that large accumulation must be taken into account as a set off against any contingent advantages of borrowing in a Higher rated fund. In adopting the hypothesis of a 3½ Per Cent. Fund instead of Consols, the question is placed in the most favourable form as regards the High Rate Theory. A 3½ per

cent. Stock would be far less exposed to early reduction, than either a 4 or 5 Per Cent. Fund—and hence the Stock Exchange value of the $3\frac{1}{2}$ per cent. Scrip, would be relatively higher than for Scrip of 4 or 5 per cent. It will hardly be contended, however, that a small $3\frac{1}{2}$ per cent. Fund of about Eight Millions would have been a very eligible description of security, after the conclusive reasons assigned by Mr. Gladstone, in 1853, for redeeming the small South Sea Funds,—reasons resting, in no small measure, on the precise ground of the ineligibility of Funds of small extent as objects of investment or fields of operation.

XVIII.—*Mr. Pitt's doctrines relative to raising War Supplies within the Year.*

It was in introducing (on the 24th November, 1797) the Budget for 1798, that Mr. Pitt prominently adverted to the necessity which had arisen for raising a large part of the Supplies within the Year; and he proposed in that Budget New Taxes to the extent of Seven Millions, as a supply in part for a deficiency of Nineteen Millions—raising the remaining twelve millions by loan.

The whole of Mr. Pitt's argument on that occasion is adjusted and balanced with extreme care; and, while he pleaded with irresistible earnestness for the necessity of a large addition to the taxes of the year, he carefully guarded himself against any maintenance of the doctrine that it was politic or just not to obtain part of those supplies by additions to the Debt. "We ought," he said, "to consider how far the efforts we shall exert to preserve the blessings we enjoy will enable us to transmit the inheritance to posterity unencumbered with those burdens which would cripple their vigour—which would prevent them from asserting that rank in the scale of nations which their ancestors so long and so gloriously maintained. It is in this point of view that the subject ought to be considered. *Whatever objections might have been fairly urged against the Funding System in its origin, no man can suppose that after the form and shape which it has given to our financial affairs; after the heavy burdens which it has left behind it; we can now recur to the notion of raising in one year the whole of the supplies which a scale of expense so extensive as ours must require. If such a plan be evidently impracticable, some medium, however, may be found to draw as much advantage from the funding system as it is fit, consistently with a due regard for posterity, to employ; and, at the same time, to obviate the evils with which its excess would be attended. To guard against the accumulation of the funded debt, and to contribute that share to the support of the struggle in which we are engaged, which our ability will permit, without inconvenience to those who are called upon to contribute, appear to me essentially necessary; and the great object of such a practical scheme must be to allot fairly and equally to every class that portion which each ought to bear.*"

The principles laid down in this passage admit of but little extension or modification. At the present time, as in 1797—and more emphatically perhaps than in 1797—the real difficulty in all discussions relating to the manner of raising the Yearly Expenses of the

War is found in these preliminary and delicate problems, which are to define in practical language the "safe medium" between Taxing and Funding, described by Mr. Pitt. We have to find—as had Mr. Pitt—some working scheme which shall raise immediately, by new burdens, as large a sum as the national industry can bear, without injuring or dislocating that nicely-balanced system upon the uninterrupted vigour of which the collection of any Taxes at all, present or future, depends. And we also—as had Mr. Pitt—have to find some practical means of so disposing those New Burdens that they shall raise within the year, "fairly and equally from every class," whatever contributions it may be considered necessary to obtain, not by borrowing on the faith of the future, but by an assessment levied on the present generation.

It is urged upon us by high authorities, and in language embracing every tone of earnestness, that, whether on grounds of duty or of interest, it will be our wisest course to adopt measures the opposite of those which were adopted by Mr. Pitt from 1793 to 1798; and determine therefore that by Taxes, and not by Loans, we will meet nearly all the increased expenditure arising out of the Present War.

So far as Self-Interest is concerned we are told, (1.) That a War expenditure supplied by Loans is an expenditure drawn not from the income, but from the capital of the country; (2.) That imposing therefore no immediate pressure by the imposition of new and heavier taxes, it renders the country indifferent as to the prolongation of War, and careless as to the most economical methods of carrying it on; (3.) That drawn from accumulations of Capital employed productively, instead of being obtained by retrenchments of the current expenditure of individuals, Public Loans raised to supply an exhausted Exchequer are the most direct means of laying the heaviest pressure of the War on the Labouring Classes,—and for the obvious reason that the amounts of Capital which are absorbed as Loans would, if not so absorbed, have been employed in extending and improving the field of productive industry; (4.) and lastly, That striking in this manner at the root of all progress in material prosperity, Loans so obtained, and so applied, are impoverishments and anticipations of the future exceedingly full of peril.

On the ground of Duty and Moral Obligation it is said, (1.) That a principle of equity forbids one generation to contract, for purposes of War, obligations which will descend as heavy burdens to the generations yet to come; and (2.) That for the perils of the Present, nothing beyond the property and persons of the Present can, on grounds of right, be laid under contribution.

To these allegations answers full and sufficient do not appear to be wanting; assuming always that the discussion is to be conducted, not as an abstract problem, the conditions of which may be true perhaps, amidst a more perfect species or in a happier planet, but with distinct and constant reference to the actual condition of this country at the present time.

Adverting to the arguments, as far as possible, in their order, it may be said:—

That, in the first place, it is by no means generally true, that, in this country, a public income considerably exceeding in amount the

income of recent years, could be raised by any appliance of taxes, the effect of which would be simply to diminish individual expenditure, leaving former and current accumulations of capital unimpaired. Any large additions to the present taxes—particularly to the present Income Tax of six per cent.—would in a multitude of quarters, and a variety of forms, be paid by encroachments on capital. Those upon whom the tax fell would make a compromise between immediate self-denial and inroads on their accumulated funds. Nor, (2) in the present state of the political institutions, of the education and public opinion of this country, can it be argued, except as a pure suggestion, that the mere circumstance of raising part of the supplies by Loans would in any sensible degree diminish the desire even of any class for an early and solid peace.

Still less (3) is it true, in a general or unqualified sense, that in this country, any such sum as is likely to be required as Loans would sensibly diminish the amount of Capital which can be fully and profitably employed in productive industry, and therefore mainly in the disbursement of wages. So far as actual researches have been carried, by the most competent enquirers, there is good reason to believe that the accumulation of capital in this country is so vast and so rapid as to lead to an annual waste and destruction of capital, the amount of which when expressed in figures sounds almost fabulous; and it is from these overflowsings—from this constant current of leakage—that the Loans would be obtained. In what manner a Government Expenditure so supplied would affect the Labouring Classes no writer is more entitled, both by his ability and his independence of judgment, to say, than Mr. Mill; and his words are as follows: “When Government Loans are limited to the “overflowsings of the National Capital, or to those accumulations “which would not take place at all unless suffered to overflow; they “occasion no privation to any one at the time, except by the payment “of the interest, and may even be beneficial to the Labouring Class, “during the time of their expenditure, by employing in the direct “purchase of labour, as of soldiers, sailors, &c., funds which might “otherwise have quitted the country altogether.” (*Principles*, B. v. C. 7.)

It may be urged, in addition to this statement of Mr. Mill's, that not only would the Labouring Class receive indirect benefit from the expenditure of Loans raised in the manner described, but that they would be exposed to an inordinate degree of suffering and pressure if the extra supplies were raised by additional Taxes. If these additional Taxes were in the form of new imposts of Customs and Excise, and additions therefore to the existing Indirect sources of Revenue, the Labouring Class would feel the pressure of the War, not merely to the full extent of the Tax, but to the much larger extent to which it is quite well known that heavy Indirect Taxes operate in raising prices to the retail consumer. If they were in the form of new Imposts of a Direct nature,—heavy additions, for example, to the Assessed Taxes, or to the House or Income Tax,—the effect (saying nothing of the gross and inherent injustice of the apportionment of the Income Tax upon the classes who actually pay it) would still fall in a great measure upon that part of the population which depends

on wages and the smaller retail trades; and, in point of fact, one of the most cogent objections to any large increase of immediate burdens consists in the extreme difficulty of so adjusting them that, again to use the words of Mr. Pitt, "the scheme shall allot fairly" and equally to every class that portion which each ought to bear."

In a poor country it might be true that money taken by the State as Loans would be Capital drawn, in the most literal sense, from the exchange and the workshop. With us the time is yet distant when supplies so raised, will do more than reduce the magnitude of the annual investments in foreign mines, and of the annual adventures in speculative foreign funds.

And as regards the last of the (4) allegations the answer seems to be equally clear, and to be little more than a logical consequence of the reply just given to the allegation which precedes it. For if we absorb as public loans only that capital which fails to find profitable employment at home, we do nothing to impoverish or imperil the future by inroads on those accumulated funds which are essential to the progress of the community. On the contrary, our apparent extravagance is the real economy, for we leave untrammelled to the fullest extent the springs and impulses of that vast and intricate organisation, by the strength and compactness of which, much more than by a few millions of debt, the character of the future will be really determined. Our trade, industry, and invention kept free from the friction of taxes, especially at this period of transition, will be a legacy to our successors far more valuable than a public debt diminished by a few millions; and here again we have the benefit of the testimony of Mr. Mill. "It may reasonably," he says, "be taken into consideration, "that in an improving country the necessary expenses of Government "do not increase in the same ratio as capital or population; any burden, therefore, is always less and less felt; and since those extraordinary expenses of Government which are fit to be incurred at all "are mostly beneficial beyond the existing generation, there is no "injustice in making posterity pay a part of the price if the inconvenience would be extreme of defraying the whole of it by the "exertions and sacrifices of the generation which first incurred it."—(*Principles*, B. v., C. 7.)

The objection to Loans, on grounds of Moral Obligation, are not more formidable than those which involve merely economical considerations.

Assuming a War to be necessary and just, (and of that question the recognised and established Government of a country existing at any particular time must be regarded for our present purpose as the legitimate and final judge,) it is hard to see on what solid foundation a difference can be set up between expenditure incurred for improvements and expenditure incurred for defence. For capital invested in the prosecution of public works,—for harbours, drainage, or lines of transit,—by the common voice, the future inhabitants of a country may be fairly charged by the generation which settles the scheme and carries through the work. But is it not plain that the simplest idea of possession involves the idea of defence? Where is the wisdom of improvement if no means are to be taken to preserve the improvements from outward assault? The more closely the plea of exempting

posterity, on grounds of right, from charges bequeathed to them by former generations is examined, the more untenable and deceptive most of its positions will be found. What sufficient answer for example can be given to the fundamental objection that there is nothing in the constitution of the world or in human nature which entitles posterity to claim an inheritance, enriched only by the fruits of wisdom and self-denial, and altogether free from incumbrances heaped up by error and misfortune. The present generation are in no sense mere life-tenants of the inheritance so far as the analogy of a life-tenancy can be made to apply. We are heirs in full and indefeasible enjoyment of the fee of the estate. Doubtless it is incumbent upon us, not less by considerations of morality than upon grounds of enlightened self-interest, to strive conscientiously and patiently to bequeath to our children, freed from as many blemishes as possible, and strengthened, beautified, and expanded, the inheritance we received from our fathers. But in directing our best efforts to the performance of this task, we shall err greatly if we take too confined a view of the full liberty of action and of choice which resides in ourselves; and of the full share of responsibility which on all grounds of right attaches to every future occupant of a country found by him in the possession of a fame, a polity, and an industrial order, the reward of long ages of sacrifice and labour, to which he has contributed nothing.

This is a train of reasoning and reflexion growing naturally and almost inevitably out of a detailed examination of the financial policy of Mr. Pitt during the early years of the last long conflict with France. In a more eminent degree, perhaps, than in any Minister of Finance of the last hundred years, there was combined in Mr. Pitt a clear appreciation of general principles, tempered by a still clearer appreciation of the modifications and corrections of which they stand in need when converted into rules of practice. The experience he had to guide him was far less applicable and extensive than that which is available to ourselves; and in his time we had barely done more than raise the framework of that branch of science which has since accomplished so much in smoothing the task of men entrusted with Government. He had to contend with new and bewildering theories, with sources of danger and failure, happily known to us only by report; and certainly it will not be questioned that the period of his financial administration was beset by internal and external difficulties more numerous and perplexing than have been encountered by any other minister of this country since the settlement of our constitution in its present form. After the lapse of sixty years, we find ourselves, in no insignificant degree, in circumstances similar to those of Mr. Pitt in 1793; and we shall hardly maintain the reputation of our country for practical views if, in dealing with the immediate exigencies of the one period, we fail to give full weight to the lessons which may be drawn from the experience of the other.

[*The Appendix to this Paper will appear in the next No. of this Journal.*]

On the Statistical Position of Religious Bodies in England and Wales.
By HORACE MANN, ESQ., *Barrister-at-Law.*

[Read before the Statistical Society, on the 18th December, 1854.]

To offer a paper upon the "Statistical position of Religious Bodies in England," is, I am aware, to invite attention to a subject which is probably familiar, and perhaps even hacknied, to most persons, by the comments which the press and various public men have passed upon the recent census tables of religious worship. But it has been suggested to me, that a brief summary of the results of those tables, combined with a summary of such portions of the educational tables of the census as show the action of religious bodies in the work of education, would not be altogether unacceptable to this Society.

But, before constructing, on the basis of the census tables, any calculations of this nature, it seems necessary to inquire whether the statements of those tables can be thoroughly relied upon, or to what extent they may be liable to error. Such an inquiry, rendered necessary by the criticisms passed upon those tables by some high authorities, appears to me to be especially appropriate to a Society like this, whose objects are not more attained by the production of original statistics, than by a proper appreciation of such as are already before the public; so that statements which are incorrect should not be received as true, nor documents substantially accurate be hastily discredited. In devoting a few minutes to this inquiry, I trust that, as I am not conscious of any desire except to arrive at the truth, no secret feeling of parental partiality will induce me to defend the census tables if they may be really at fault.

The objections to the accuracy of the census, in all that relates to religious bodies, may be classed under three heads:—

First.—It is said that the plan of inquiry was defective, and the persons who projected and completed it were not impartial.

Secondly.—It is said that, for various reasons stated, the numbers given in many of the original returns were incorrect.

Thirdly.—It is said that, even accepting the numbers in those returns as accurate, they convey an erroneous impression.

1. That portion of the first class of objections which relates to certain supposed prejudices and evil designs, existing in the persons to whom the management of the census was confided, may be best perhaps met by a simple repudiation of any such prejudices and designs. I can confidently say that it is impossible for any one to be more absolutely free from even the shadow of bias or sinister intention, than was the Registrar-General; and if I may be allowed to know anything of the sentiments of the person who superintended the arrangements and compiled the report, I may say with equal confidence that, in spite of the ecclesiastical opinions which have obligingly been found for him by several journals, it was next to impossible for him to be actuated by any hostile spirit towards the

Church of England, although he did not think that a sincere desire to promote the best interests of the Church, was at all inconsistent with an official impartiality towards Dissenting bodies.* Thus much of personal reference will perhaps be forgiven, for the sake of the object with which it is introduced.—But two objections are preferred against the *plan* adopted. The one is, that to count *attendants* at places of worship, is not so good a criterion as to ask every person in the country to state his religious belief. This of course is a matter of opinion; and, for my own part, I humbly consider that the latter form of inquiry (which is far too inquisitorial to be ever adopted in England), would produce results utterly untrustworthy; since numbers of people, who have not the slightest connection with any religious communion, would, from the mere shame of openly avowing practical atheism, enrol themselves as members of some church, most probably the Church of England, which could gain no possible advantage from a view of her position so entirely delusive, while the people themselves would suffer from the diminution of missionary zeal which this delusion would most probably produce. The other objection to the plan adopted is, that the returns were voluntary and secret: the parties were not liable to penalty for mis-statement, and the individual returns were not to be published. Of course, it is impossible to say, how much was lost by the want of a compulsory enactment; but it by no means follows that there were not considerable safeguards for accuracy even on the voluntary plan. I am myself inclined to place very great confidence in the general disposition of men to truthfulness; and although in this case, the unhappy feeling of sectarian rivalry would, undoubtedly, beget a strong desire that the returns should show a good array of numbers, yet, considering the position of the persons signing these returns—in nine cases out of ten, ministers of the truth—I am unable to believe that even the humblest of them would attach his name to any wilful falsehood. But apart from this safeguard, there were others provided by the census machinery. Even if a minister or deacon were willing to mis-state, he would not like to be detected, nor would he run the risk of such detection, if the risk were at all considerable. What then was the check provided by the census mode of enumeration? Just this: there were thirty thousand officers employed to collect these returns and to revise their accuracy. Each of these officers would have his attention confined to a little plot, with not more than a hundred or two of houses, and only one or two places of worship. Is it then likely that a minister of religion would make a false return, knowing that it was to receive the scrutiny of an officer—who had been chosen without reference to creed—who, living on the spot, was probably familiar with the state of the usual congregation—whose very duty it was to check the return, and who, having done so, would forward it for a second scrutiny to his superior officer, the local registrar? Surely, here was an ample provision against the untruthfulness of ministers of religion, quite sufficient to justify the

* The same absence of hostility to the Church was manifested in the choice of the subordinate officers. Of the twenty or thirty clerks who dealt with the Returns at the central office only two were dissenters, and they were only occupied for a portion of the time.

pledge that, for the sake of preventing all invidious comparisons, the returns of individual congregations should not be made public!*

2. With reference to the accusation that many of the religious returns contained inaccurate figures, what has been already said about the character of the parties making the returns, and the revision to which the statements were subjected, will suffice to show the extreme *unlikelihood* of any extensive falsification. And if it be said that the charge is only preferred against dissenting ministers in humble life, having oversight of very small congregations, it must be recollected that the very smallness of their chapels would facilitate the detection of exaggeration, even admitting (which I should be sorry to do) that ministers in humble life were less disposed than their superiors to adhere to truth. No doubt, there did occur particular cases of exaggeration, both amongst dissenters and churchmen; but I am convinced that they were not intentional, but were the real opinions of the parties, who, not taking the precaution to have their congregations *counted*, judged erroneously upon a question never easy to decide. But that no considerable over-estimate of dissenting congregations was committed, is susceptible of another mode of proof. It is not asserted that their *accommodation* (number of sittings) was exaggerated; and, indeed, it would be next to impossible to escape detection if such an attempt were made; and the fact that the returns give an average number of sittings to a *chapel* of

* The same arguments will apply, in some measure, to the Educational Returns, which have likewise been assailed on the score of exaggeration. There was the same check furnished by the supervision of the enumerators; and even if some of these omitted to scrutinize minutely, it could not be known to the party making the return that it would escape a due revision. But, in fact, a careful analysis of the number and kinds of schools returned will show that the idea of any large exaggeration cannot be supported. Any one who will glance through the list of *Public Schools* (in Table B, p. cxxiii. of the Report,) will perceive that there is really *no room* for such mis-statement. Nine-tenths of the returns from public schools were signed by respectable parties, (very many by clergymen,) having no interest to deceive, and probably in possession of school registers; and the very facts themselves are accordant with what was previously known or supposed. Taking the Church Schools, the Denominational Schools, the British Schools, the Census figures are confirmed by the accounts of the National Society and of the various religious bodies; and if these be considered accurate it will be seen that the numbers placed against the other descriptions of public schools are either too obviously probable to permit of any question of their general correctness, or else are too small to allow any fabrication to affect the total. We must look, then, to the *PRIVATE SCHOOLS*: but here, too, there is equally a lack of margin for exaggeration. The whole number of scholars in private schools is but 721,396, a number actually less than in 1833! and a number far from being *à priori* excessive at the present time. And, then, about 500,000 of these are in schools for the upper and middle classes; a number, again, so far from being excessive that it is difficult, with such a small contingent, to believe that the children of those classes can be getting any proper education; so that there is only left about 220,000 for those many thousands of inefficient dame schools, and other schools for the working classes, the existence of which is proved both by the Reports of Her Majesty's Inspectors, and by the fact that some 15,000 of them were expressly named in the lists of the census enumerators, who were not very likely to insert fictitious *schools*. There is, consequently, very little doubt that the number of scholars stated in the Census Tables does not vary perceptibly from the truth, and, at all events, not on the side of *excess*. What is the real *value* of the schools is, of course, another question which the Census does not profess to settle, and on which we must all be glad to be enlightened by the opinions of Her Majesty's Inspectors and of other capable observers.

only 240, in opposition to an average of 377 for a *church*, is tolerable evidence that no such attempt *was* made. If, therefore, there were any noticeable exaggeration in the number of the attendants—if chapels were frequently stated to contain more than they would hold—of course the proportion of attendants to sittings would be very much higher amongst dissenters than amongst churchmen. What are the facts? To every 100 *church* sittings available for morning service, the number of attendants was 52·4; while to every 100 *chapel* sittings, the number of attendants was 53·4; a difference of just one per cent. only in favour of the dissenters. Taking the afternoon service, there were 50·3 church attendants to 100 sittings, and 51·6 dissenting attendants. It is only in the evening service that any real difference is apparent; there being 49·5 church attendants to 100 sittings, and 54·6 dissenting attendants to 100 sittings. But then it is so well known that, from various causes, dissenters attend evening services more numerous than churchmen, that this disproportion cannot be regarded as at all unreasonable; and the whole of these facts, taken together, prove conclusively, that no exaggeration can have been committed such as would at all affect the general result.* It must be recollected, too, as a set-off against any possible exaggerations, that whatever omissions of whole congregations may have happened in the course of enumeration, must have been of *dissenting* congregations; since there was no authority like that of the "Clergy List," by which to check the completeness of their returns. In the case of the Church of England, care was taken that some account should be procured from every place inserted in the Clergy List.

But perhaps, if dissenters' returns were not appreciably exaggerated, those for the Church of England may have been unduly diminished. This is supposed to have been likely, partly in consequence of the refusal of some clergymen to fill up the schedules, which were in that case filled up by registrars, who might it is said be hostile to the Church; and partly in consequence of erroneous estimates for cases of defective information. I am not prepared to say that some particular instances may not have happened, such as would appear to justify the former charge; but I am quite convinced that such a course was very rarely followed, and that the registrars (men chosen without any reference to religious views, being generally relieving officers) discharged their delicate duty honestly, in the few cases where it was required; for, in fact, so generally willing were the clergy to reply to the friendly inquiries of the government, that the number of returns referred to the registrars scarcely exceeded 10 per cent., and nearly the whole of the 90 per cent. remainder, were signed by the ministers themselves—the cases being very rare in which churchwardens were the parties who supplied the

* In this calculation the Roman Catholic sittings and attendants have been excluded, as the practice adopted by that body of having several distinct congregations at the morning service would interfere with the estimate. This practice will account, in some measure, for the fact that their Returns show frequently a greater number of persons than could be accommodated at one time; and as we know, from other sources, that the number of Roman Catholics in England and Wales cannot fall short of 1,000,000, it is evident that the Census account cannot greatly err in stating the number of attendants at 305,393.

information. We may safely, therefore, take the figures inserted in 90 per cent. of the returns, as being neither more nor less than the exact truth; and it is hardly possible that amongst the other 10 per cent., there should have been so great an amount of falsification, as to make the total account for the Church of England sensibly erroneous! As to the estimates, the fairness of the plan adopted, of inserting, where the number of sittings or attendants was unmentioned, the average number for a church throughout the whole of England, seems too obvious for argument; and certainly, although it would not be just to infer that, wherever information was refused, the congregation was *below* the average, there can clearly be no reason for supposing it would be *above* it!*

On the whole question, therefore, of whether the Census Returns supply a fair account of the numbers actually attending the various churches and chapels on the census Sunday, I can really perceive no adequate reason for denying that they do. The overwhelming preponderance of cases in which the clergy were themselves the authorities for the census statements, shews that there was really *no margin* for extensive error; while it is only just towards the great body of registrars, to express a disbelief of their complicity with any fraud. On the other hand, whatever exaggerations may have been committed by dissenters (if, notwithstanding the improbability already mentioned, such *were* committed), cannot have been sufficiently extensive to disturb the general total, and are probably more than counterbalanced by the total omission of some congregations which, either from their smallness and obscurity, or from some other cause, may have escaped enumeration or tabulation.

3. The third class of objections maintains that, even admitting the figures in the returns to be in the main accordant with the fact, yet they lead to erroneous inferences respecting the actual number of attendants, and especially respecting the comparative numbers of churchmen and dissenters. Thus, it is said, (i.) that the weather was unfavourable; (ii.) that dissenters made great efforts to fill their chapels, having special services and popular preachers; (iii.) that children were taken from National schools to go to chapel; (iv.) that some who went to chapel in the evening, had been to church in the morning; (v.) that the same persons attended at several chapels, and were thus counted twice over.

These objections scarcely seem to me to be entitled to much weight. For (i.) the *weather* on the census Sunday was, I believe, about the average of the season; and it is evident, that even if a less

* The Bishop of Oxford stated, in the House of Lords, (July 11th, 1854,) that the Census Returns showed, for his diocese, only 98,410 attendants, whereas, according to his own *data*, there were as many as 117,421, being a deficiency of 19,011. The fact is, that the Census Tables contain no such figures as those quoted; and the Bishop in his recent charge (p. 39,) seems to retract his statement and to assent to the general accuracy of the tables. His words are, "The Returns and calculations of the compiler of the Religious Census give us 147,362, as having attended on the Census Sunday at our churches, from which estimate your own Returns of your average congregations do not materially differ." Of the Educational Returns he says, "The Returns of the Education Census, in spite of some remarkable errors," (which I believe a minuter inquiry would explain,) "appear on the whole to be tolerably accurate."

than usual number of the people did on that account resort to worship, the decrease would apply to churchmen and dissenters equally; for the *rain*, at all events, can hardly be accused of partiality. (ii.) Again it cannot be imagined, that the utmost amount of "special effort" by the dissenters, would augment materially the aggregate number of their congregations: a popular preacher could not preach in two places at the same time; so that what was gained by one chapel would be lost by another—the total number in all the chapels being undisturbed. (iii.) Again, as to the children taken from the National schools (though this does not appear to have been at all a general proceeding), probably dissenters would contend that the children of dissenting parents, properly belonged to the dissenters, and that the number of churchmen has been unduly swelled by the compulsory attendance of such children at the parish church. (iv.) And much the same might be asserted as to persons who attended church in the morning and chapel at night: they might as reasonably be classed with one as with the other; though in fact, by the method of computation adopted in the Census Report (as will be immediately explained), the whole of them are assigned to the Church and only a third of them to the dissenters.

(v.) The objection as to *double attendances* deserves more attention on account of its singularity. Many are probably aware that the form or schedule, to be filled up for each place of worship, contained three columns for the number of attendants; one for the morning service, one for the afternoon, and one for the evening: each column to be filled up with the number of attendants at that particular service. By this mode would be obtained the total number of attendants at each of these three services, in the whole of England and Wales, and as the total of the three services would of course be the number not of individuals, but of *visits*, it would be for the reader of the census tables in which these figures would appear, to judge for himself how many separate persons were probably represented by them. Now, it is gravely suggested that by some extensive conspiracy (for only by such could the plan be carried out), all the customary attendants at some particular dissenting chapels, after attending morning service at their own chapels, took the trouble to attend the afternoon or evening service at some other chapel, with a view to be counted twice, and thus to swell fictitiously the number of non-conformists! That is, these clever conspirators journey from parish A to parish B, in order to be counted twice over, when they would equally have been counted twice over if they had stayed at home! The utmost they could do by their manœuvre, would be to swell the return of parish B at the expense of parish A; for by filling a distant chapel they, of course, left empty their own. In fact, unless they could manage to be in two distinct chapels at the same time, it is clear that their unfair designs could not succeed: it would always be open to any one to make the comparison on some one particular service of the three—to compare the morning attendance of churchmen with the morning attendance of dissenters, or the evening attendance of churchmen with the evening attendance of dissenters. It is only when it is sought to compute the number of separate persons, belonging to each party, who attended service *at all*

on that Sunday, that any difficulty can arise ; and then the question is, what allowance is to be made for parties attending twice or three times ? In the Census Report, the allowance made has been this : it has been assumed that half the afternoon congregation had previously attended the morning service, in some place or another, and that two-thirds of the evening congregation had attended one or the other of the two preceding services, in some place or another. If, therefore, any evening congregation was composed, exactly and without a single exception, of the same persons as attended the morning service, the number of that congregation would be over-estimated in the Census *Report* (though not in the *tables*), to the extent of a third of the evening attendances. But, it is evident that, even on the theory of a conspiracy, the notion of such a complete identity cannot be entertained : it is an apparant fact that, some considerable portion of the evening congregations is composed of persons attending then for the first and only time ; and the question is whether, on the average, these fresh worshippers may be assumed to form a *third* of the evening congregation. Similarly, with regard to the *afternoon* service, the question is whether the fresh worshippers at *that* period of the day may be assumed to form a *half* of the afternoon congregation. These are the proportions assumed in the Report, with the view of allowing for double attendances. Of course, the computation based upon them, is but the conjecture of an individual ; and any other person is at liberty to make a computation for himself. For my own part, I have seen no reason to abandon my conviction of the general fairness of this estimate, which, undoubtedly is so far from being unfavourable to the Church of England, that some of the dissenters—the Wesleyans, I believe—have attacked it as unfair to them ; as it is their *most numerous* service which has been diminished by two-thirds, while the Church of England suffers that diminution with respect to its *least* numerous service.

So that, on an entire review of all these various objections, to the plan of the inquiry, to the authenticity of the returns, and to the value of the inferences, I am really unable to arrive at any other conclusion, than that the general facts and totals of the census are substantially correct. Isolated errors, doubtless, may be pointed out, but not such a number of errors as would cause a noticeable alteration in the aggregate.* That aggregate, I fully believe, may be accepted as a faithful statement of the numerical position of religious bodies in this country, so far as their position may be inferred from attendance on religious services. What is really to be inferred upon that point, from *data* of this description, may perhaps be a matter for investigation and debate ; but in expressing my opinion that the *data* themselves are worthy of reliance, I believe that I do so honestly, without bias, and as a mere measure of justice to the parties who made the returns. That a certain amount of sensitiveness should be exhibited with reference to so delicate a matter, was perhaps inevitable ; but that the real interests of the Church of England can be prejudiced by a faithful statement of *facts*, is a

* It will, doubtless, be in the recollection of many that Lord Palmerston expressed his opinion to this effect when interrogated on the subject in the House of Commons.

notion which few reflecting persons will seriously entertain. An accurate acquaintance with the truth, although it may in some respects be painful, must be better than a treacherous concealment; and must even be more necessary when dangers threaten than when all is prosperous. If the facts of the recent inquiry are in some respects discouraging, the Church will soon know how to overcome her difficulties; and her progress will be all the speedier, now that the magnitude and character of her task are better measured and defined. Nor will the Church herself, I am persuaded, long withhold the acknowledgment that a service of no inconsiderable worth was rendered to her when, by the census of 1851, her true position and her mighty task were both more clearly set before her.

Assuming, then, that the census returns supply a substantial basis of statistics, upon which to build up some kind of estimate of the numerical position of the various religious communities at present existing in England, the principal results of these returns will be found presented in Table A, (page 150,) which shews not only the accommodation for, and the attendance at, religious services, but also the number of scholars in all the Sunday schools, and in such of the day schools as, being supported by religious bodies, must be regarded as a portion of their strength and influence.

A glance at this table will suffice to shew, that the list of religious bodies there given, may be reduced to the six principal; which together provide nine-tenths of the whole accommodation for public worship. These six are, the *Church of England*, the *Independents*, the *Baptists*, the *Wesleyan Methodists*, the *Calvinistic Methodists*, and the *Roman Catholics*. The total number of sittings provided by these bodies, is 9,769,105, out of 10,212,563. For the purpose of comparison, therefore, it will be as well to confine special attention to these six, combining all the rest under the general heading of "other Religious Bodies." In this view, the facts as to church and chapel accommodation will stand thus:—

	Churches and Chapels.	Sittings.
Church of England.....	14,077	5,317,915
Independents, or Congregationalists.....	3,244	1,067,760
Baptists (all sections).....	2,789	752,343
Wesleyan Methodists (all sections)....	11,007	2,194,298
Calvinistic Methodists.....	937	250,678
Roman Catholics.....	570	186,111
Other religious bodies.....	1,843	443,458
	34,467	10,212,563

It thus appears that, of the whole amount of accommodation in the country, the *Church of England* supplies 52·0 per cent.; the *Independents*, 10·5 per cent.; the *Baptists*, 7·4 per cent.; the *Wesleyan Methodists*, 21·5 per cent.; the *Calvinistic Methodists*, 2·5 per cent.; the *Roman Catholics*, 1·8 per cent.; and the *Other Bodies*, 4·3 per cent. If the Church of England be compared with all the other bodies together, her proportion of the whole provision is as 52·0 against 48·0.

Of course, from this comparison, it cannot be assumed that the provision made by each body is of the same *kind*; for, if we were to consider the *sort* of accommodation thus provided, there would be found a very great difference as to the stability and permanence of the structures in which these 10,212,563 sittings are contained. The difference, in this respect, between the Church of England and the other bodies, is sufficiently apparent from the simple fact, that her 5,317,915 sittings, are contained in only 14,077 buildings, while the 4,894,648 sittings of the other bodies, are distributed amongst as many as 20,390 buildings. In other words, every church, on an average, is large enough to accommodate 377 persons; while the average number for a chapel, is only 240. But this difference is still more obvious, when we consider that a great number of dissenters' places of worship are mere *apartments*, used as preaching stations and school-rooms, and not separate structures built expressly for religious worship. According to the census returns, out of the 20,390 places of worship, not belonging to the Church of England, there were 3,285 which were not separate buildings; but there can be no doubt that this represents very inadequately the number of such preaching stations and school-rooms; which Mr. Edward Baines (who has paid great attention to the subject) considers cannot be less than 7000. The number of places of worship belonging to the Church of England, which were not separate buildings, was only 223. If, therefore, it were desired to compare the *pecuniary value* of the provision made by each religious body, scarcely anything would be learnt from this view; but, as the present object is to compute the number of persons attached to each community, perhaps the *character* of the accommodation is a matter of subordinate importance.

If it could be assumed that the whole population of the country was absorbed by the various religious bodies, in exact proportion to the accommodation provided by each, we should have

Church-people.....	9,335,000	Wesleyan Methodists	3,852,000
Independents	1,874,000	Calvinistic Methodists	440,000
Baptists	1,321,000	Roman Catholics	327,000
and 778,000 belonging to the remaining bodies.			

That would be 9,335,000 Church-people, and 8,592,000 not Church-people.

But, for several reasons, such an assumption would be unjustifiable; since (1,) even supposing that all young children may be fairly numbered with the adherents of the church or sect to which their parents are attached, it is yet but too evident that very many parents are attached to no church or sect whatever; (2,) the adherents to some bodies may not be so zealous as some others, in the use of their buildings, and would, therefore, not require so large a provision in proportion to their numbers; and (3,) the existing provision may have been the work of some previous generation, still retained (by endowments or otherwise), although the religious body may have much diminished. An illustration of this last objection is furnished by the Society of Friends, who have been declining in numbers for some years, but who still retain an amount of accommodation which gives 100 sittings to every 8 worshippers.

A better, though not a perfect, test of comparative strength, would be furnished by a statement of the usual number of *attendants* at the services of each denomination.

TABLE A.

	Churches and Chapels.				Sunday Schools.		Day Schools.	
	Number of Churches and Chapels.	Number of Sittings.	Number of Attendants.		Number of Schools.	Number of Scholars.	Number of Schools.	Number of Scholars.
			Morning.	Afternoon.				
Church of England	14,077	5,317,915	2,541,244	1,890,764	10,427	935,892	10,555	929,474
Scottish Presbyterians	160	86,692	47,582	9,435	135	16,462	37	4,231
Reformed Irish Presbyterians	1	120	....	....	....	....	....	....
Independents, or Congregationalists	3,244	1,067,760	524,612	232,285	2,590	343,478	453	50,186
Baptists (all sections)	2,789	752,343	360,806	224,268	1,767	186,510	131	9,390
Society of Friends	371	91,599	14,364	6,619	35	3,212	33	3,026
Unitarians	229	68,554	28,483	8,881	140	15,279	39	4,306
Moravians	32	9,305	4,993	2,466	24	1,818	7	366
Wesleyan Methodists (all sections)	11,007	2,194,298	707,921	615,895	6,163	643,900	440	45,880
Calvinistic Methodists	937	250,678	100,831	63,520	1,015	120,727	54	3,643
Sandemanians	6	956	439	256	....	....	....	....
New Church	50	12,107	4,846	2,404	27	3,481	9	1,551
Brethren	132	18,529	5,699	4,509	15	638	....	....
Isolated Protestant Congregations	539	104,481	36,969	24,208	542	63,334	76	8,979
Roman Catholics	570	186,111	252,783	53,967	232	33,254	339	41,382
Catholic and Apostolic Church	32	7,437	3,176	1,659	1	47	....	....
Mormons	222	30,783	7,517	11,481	23	984	....	....
Jews	53	8,438	2,910	1,202	....	....	12	2,361
Foreign Churches	16	4,457	2,307	316	1	20	5	352
Total	34,467	10,212,563	4,647,482	3,184,135	23,137	2,369,039	12,190	1,105,127

Note.—The figures in this table include an estimate for such of the Returns as were defective in their information. The number of *Day Schools* consists of all such as derive any portion of their income from the contributions of specific religious bodies, and does not therefore include 514 *Barrish Schools* (containing 82,597 scholars,) and 4 other schools (containing 1,062 scholars,) which are supported by various bodies in combination, but principally by dissenters. Neither does it include the schools supported by Government, by endowments, and by various philanthropic bodies, nor private schools. The *total* number of day schools in England and Wales was 46,042, containing 2,144,378 scholars.

From Table A, it will be seen that the attendance, on Sunday, March 31st, 1851, at all the churches and chapels in England and Wales, was as follows :—

	Morning Service.	Afternoon Service.	Evening Service.
Church of England.....	2,541,244	1,890,764	860,543
Independents	524,612	232,285	457,162
Baptists	360,806	224,268	345,116
Wesleyan Methodists	707,921	645,895	1,063,537
Calvinistic Methodists	100,831	63,520	144,403
Roman Catholics.....	252,783	53,967	76,880
All other bodies	159,285	73,436	116,808
	4,647,482	3,184,135	3,064,449

Or, comparing the Church of England with all the rest together, there would be, at *morning* service, 2,541,244, against 2,106,238; at *afternoon* service, 1,890,764 against 1,293,371; and at *evening* service, 860,543 against 2,203,906. If all these were individual persons—*i. e.* if no person had attended more than once on that Sunday—the total would shew 5,292,551 attendants at church, and 5,603,515 attendants at chapel. But, as it is certain that very many persons attended twice, and some three times, it is necessary to make an estimate of the probable extent of such double and treble attendances, before we can calculate the actual number of separate persons who attended at *all* on the Sunday in question. The plan adopted in the Census Report was as follows :—First, the numbers attending *morning* service were taken as a basis, since it was clear that they were all separate individuals who could not yet have attended twice; then, it was asked, how many of the *afternoon* attendants were not present anywhere at the morning service, and ought, therefore, to be added as fresh worshippers? and it was supposed that *a half* of them were thus additional: finally, a similar question was put concerning the *evening* attendants, and it was supposed that *a third* of them had not attended anywhere, at *either* of the previous services, and ought, therefore, to be considered as a further addition of new worshippers. It will be evident that this computation mainly rests upon conjecture; and anyone, of course, is at liberty to make a different conjecture, and to assume that the number of new worshippers at the afternoon and evening services, is likely to have been more or less than a half and a third respectively, and also that the proportion may have varied, as no doubt to some extent it did, in various religious bodies.* For myself, while anxious to allow the possibility of error, I have yet sufficient confidence in the probable correctness of the estimate to venture to reproduce its principal results in Table B.

* Thus, if *more than half* of the 1,890,764 attendants at the afternoon service of the Church of England, and *more than a third* of the 860,543 evening attendants, were *new* worshippers, the total number of church attendants would be *under* estimated; and, on the other hand, if *less* than half of the 1,293,371 afternoon attendants at dissenting services, and *less* than a third of the 2,203,906 evening attendants were *new* worshippers, the total number of dissenting attendants would be *over* estimated; and *vice versa*.

TABLE B.

Religious Body.	Estimated Total Number of Attendants at all the Services.	Religious Body.	Estimated Total Number of Attendants at all the Services.
Church of England.....	3,773,474	Sandemanians	587
Scottish Presbyterians.....	60,131	New Church	7,082
Independents, or Congrega- tionalists	793,142	Brethren	10,414
Baptists (all sections).....	587,978	Isolated Congregations	63,572
Society of Friends	18,172	Roman Catholics	305,393
Unitarians	37,156	Catholic & Apostolic Church	4,908
Moravians	7,364	Mormons	18,800
Wesleyan Methodists (all sections).....	1,385,372	Jews	4,150
Calvinistic Methodists	180,725	Foreign churches	2,612
		Total	7,261,032

This table shews the computed number of persons who attended *at one service or another*, on the census Sunday, and therefore, represents the entire number of worshippers on that day. The position of the Church of England, as compared with those not belonging to her communion, is thus seen, according to this view, to be 3,773,474 worshippers against 3,487,558.

But it is clear that these 7,261,032 persons, who attended service *on one particular Sunday*, cannot be taken to represent the total number of persons who are in the habit of worshipping, *more or less frequently*, with some particular communion. A considerable number, doubtless, attend on one Sunday who may not attend the next; some perhaps worship only on alternate Sundays; others still more occasionally. And yet these occasional attendants must unquestionably be reckoned, in any calculation of the total number of persons who, by frequenting public services, give evidence of their connection with particular religious bodies. But, it is just at this point that we are destitute of information, and, I fear, without the means of forming any very probable conjecture. This is unfortunate, because a knowledge of the number of these casual or irregular attendants is very essential to a fair comparison between the different communions; since some are much more constant than others in their attendance at religious worship. Thus, there can be little doubt that, whatever may be the cause, the great body of Protestant dissenters are more assiduous in this matter than are churchmen. That is, out of a given number (say 1,000,000) of dissenters, the proportion found attending service on any particular Sunday will be greater than the proportion of churchmen out of a similar number; so that 1,000,000 attendants at church would represent a greater number of professed churchmen, than 1,000,000 attendants at chapel would represent of professed dissenters. In this respect, the Roman Catholics are probably in much the same position as the Church of England; while the Jews and some other sects are altogether exceptional. So that, supposing it would be a proper allowance if, on account of casual attendants and young children, an addition should be made to the Protestant dissenters and the minor sects, of *two-thirds* of the number of their

worshippers on one particular day, it would probably not be too much, in the case of the Church of England and the Roman Catholics, to *double* the number of their attendants; so as to make the total number of worshippers (both constant and occasional) and their families, amount to

Church-people.....	7,546,948
Roman Catholics.....	610,786
Protestant Dissenters and others	5,303,609
	<hr/> 13,461,343

These numbers are, of course, only given as an *illustration* of the sort of allowance which, it seems to me, ought to be made on account of the difference between different bodies in regularity of attendance: I, by no means, venture to make any precise estimate on so dubious a matter.

Scarcely less dubious is the question, how to regard the very considerable number who never attend public worship at all? It may be held by some that attendance at a church or chapel, though the best test possible of adherence to a particular communion, is not an exhaustive test; and that some of the invariable non-attendants may have shewn, by other outward actions, their connection with, or preference for, some special religious body. But probably the general opinion will be, considering the great importance which all bodies attach to public worship, that while such an important indication is wanting, it can only be to a very limited extent that any other sign of ecclesiastical preference can be admitted. And even with respect to the test of attendance itself, it will of course be recollected that this gives us no idea of the *character and value* of the adhesion represented by it—whether it be intelligent and firm, and to be relied upon in the hour of conflict, or merely customary and superficial, such as might be easily shaken if a time of storm and difficulty were to come.

If, with a view of getting further *data* for computing the comparative numerical position of the various bodies, we refer to the statistics of their Sunday schools and day schools, we are struck with a remarkable diversity: the Church of England having barely three-eighths of the Sunday scholars, while it has more than four-fifths of the day scholars. The actual figures, for the bodies previously selected, and including (though not altogether proper) the undenominational British schools with those of the dissenters, are as follows:—

	Sunday Scholars.	Day Scholars.
Church of England	935,892	929,474
Independents, or Congregationalists	343,478	50,186
Baptists (all sections)	186,510	9,390
Wesleyan Methodists (all sections)....	643,900	45,880
Calvinistic Methodists.....	120,727	3,643
Roman Catholics.....	33,254	41,382
Other bodies, and British Schools....	105,278	107,769
	<hr/> 2,369,039	<hr/> 1,187,724

Thus, the Church has *fewer* Sunday scholars by 497,255, than the other bodies ; but has 671,224 *more* day scholars. It seems tolerably certain, from these figures, that a great many children who attend the Church day schools, attend dissenters' Sunday schools ; and thus, as both day and Sunday schools must apparently be looked upon as, in some measure, institutions for creating future religious opinions, the comparative efficiency of each for that purpose is tested. Hitherto, it appears that the greater influence has been produced by the more specifically religious teaching of the Sunday school ; for there can be no doubt, that dissenters have greatly increased in number during the last half century, and that very many of them in their youth were instructed in Church day schools. It is not unreasonable, therefore, to suppose that it was the dissenting Sunday school which mainly determined the complexion of their ecclesiastical opinions ; and it is both an important and an interesting question, how far the same conflicting influences are still in operation, and how far the future position of religious bodies is likely to be affected by them ? The Sunday school has probably been very much underrated as a means of religious propagandism. Such, in fact, it is ; and it cannot but be so, however undesigned by its promoters. And, as day schools multiply and secular instruction gets diffused, the Sunday school, relieved from the task of teaching children to read, will become more and more, and more effectively, an institution for *religious* education, and, by inevitable consequence, *denominational* extension. The Church of England, evidently, is not altogether blind to the value of the Sunday school in this respect ; as the very great increase of such schools within the last twenty years will show. For, of 9,356 Church Sunday schools, which were returned with the date of their foundation, there appear to have been established—

Before 1801.....	986
Between 1801 and 1811.....	843
" 1811 " 1821.....	1,325
" 1821 " 1831.....	1,452
" 1831 " 1841.....	2,291
" 1841 " 1851.....	2,459

Probably a continuance of this rapid increase will in time destroy the anomaly just pointed out ; and, possibly, some other mode, more generally applicable, may be discovered by the Church of doing the work now done by the Sunday school. If this should prove to be the case, it seems a reasonable anticipation that the Church of England, having possession of nearly the whole of the day schools for the poor, and providing for the efficient Sunday instruction of all those who receive from her their daily education, must gradually improve her position towards dissenting bodies, and obtain an influence upon the future generation which can scarcely fail to bring about a large result. The rapid rate at which the Church of England is monopolizing (if the word may be applied correctly to so noble an achievement) the popular day schools of the country, will be evident from the fact that, between 1831 and 1841, she founded at least 2000 of such schools, while the number established in the subsequent ten years (1841 to 1851), was upwards of 3,500. It is therefore likely that, in the course of those twenty years (1831 to 1851), the

Church (with the aid of the Committee of Council) provided the means of education for upwards of *half a million* of scholars; *i. e.* for the whole increase of school population in that period.* It is true, that during these decennial intervals, the dissenters put forth efforts very considerable in proportion to their means—many declining to receive aid from public money; but their positive progress, as might be expected, has been so far behind that of the Church, that whatever ecclesiastical influence is produced by the day school teaching of the latter, is now, as we have seen, exerted over 929,474 out of the whole 1,187,724 day scholars, in the schools of religious bodies. And this disproportion is likely to increase rather than diminish; for, the grants of public money being awarded not according to the *numbers* but the *wealth* of religious bodies, dissenters, even if they should become disposed to receive assistance from the State, can never expect to obtain a share at all approaching that which the superior means of churchmen will enable them to claim. It is impossible, therefore, not to regard the vast preponderance of the Church in the business of day school education, as an element of very great strength; such, as, in fact, being the production of recent years, we cannot yet well appreciate, but also such as is not unlikely to work out extensive changes in the years which are to come.

The figures and observations hitherto quoted and advanced, have had reference to the position of religious bodies in the *aggregate of England and Wales*. But of course, even without any knowledge of the facts, it would not be expected that the distribution of these bodies would be found to be uniform throughout the country. Scarcely anything, indeed, is more curious or more puzzling, than the attempt to trace the causes why particular doctrines or religious parties, should find one soil favourable and another adverse to their propagation and success. But, at all events, as far as *facts* are concerned, England furnishes a striking picture of sects and creeds almost supreme in one part and absolutely unknown in another. Thus, the *Calvinistic Methodists*, so powerful in North Wales, where they provide for 27 per cent. of the population, are insignificant in all the English counties; not providing in any (except Monmouthshire and Worcestershire) for even *one* per cent. of the inhabitants. The *Wesleyan Methodists*, again, though rather more equally distributed, display a great superiority in Cornwall, Derby, Durham, Lincolnshire, Nottinghamshire, and Yorkshire; while they are very few in Essex, Hertfordshire, Kent, Middlesex, Surrey, and Sussex. The *Independents* are most in Dorsetshire, Essex, Monmouthshire, and Wales; fewest in Cornwall, Durham, Herefordshire, Northumberland, and Worcestershire. The *Baptists* have a considerable number of adherents in Bedfordshire, Buckinghamshire, Huntingdonshire, Leicestershire, Monmouthshire, Northamptonshire, and South Wales; but they have scarcely any in Cheshire, Cornwall, Cumberland, Durham, Lancashire, Northumberland, Staffordshire, Westmorland, and the North and East Ridings of Yorkshire. The *Roman Catholics* shew little prominence anywhere, except in Lancashire; and the *Scottish Presbyterians*, naturally are found in the border counties of

* On the assumption that 1 scholar to 8 persons is a tolerably satisfactory proportion.

Northumberland, Cumberland, and Durham, and nowhere else. These results, with the precise ratios, will be found in Table C, which also shews that the position of the *Church of England* varies, in like manner, in various counties, both as to the positive amount of her provision, and as to its comparative amount in relation to other bodies. Her positive provision varies from what would accommodate 17·6 per cent. of the population, which is the lowest amount, and refers to Durham, to what would supply 58·1 per cent. of the population, which is the highest amount, and refers to Rutland. As to the rest, there are thirty counties in which the Church provides for *more* than 30 per cent. of the inhabitants, and fourteen counties (reckoning North and South Wales as *two*) in which she provides for *less* than 30 per cent. In Durham, Lancashire, Middlesex, and Northumberland, the Church provides for *less than* 20 per cent. of the population: in Berkshire, Buckinghamshire, Dorset, Herefordshire, Lincolnshire, Norfolk, Northamptonshire, Oxfordshire, Rutland, Shropshire, Somersetshire, Suffolk, Westmoreland, and Wiltshire, she provides for *more than* 40 per cent. It does not, of course, follow that the counties in which the Church has the least positive provision, are those in which she is least powerful in relation to other bodies. The facts upon this latter point appear to be, that there are thirty counties in which the Church provides more accommodation than all the other bodies together, and fourteen counties (reckoning North and South Wales as *two*) in which the united accommodation of the other bodies exceeds the provision made by the Church. The latter fourteen counties are Bedfordshire, Cheshire, Cornwall, Derbyshire, Durham, Lancashire, Monmouthshire, Northumberland, Nottinghamshire, the three Ridings of Yorkshire, and North and South Wales. The actual majority of dissenters' sittings in these counties altogether, is as many as 773,352; of which no less than 338,329 are in Wales, and 169,023 in Yorkshire. As, in the whole of England and Wales, the Church possesses 423,267 more sittings than all the other bodies, it follows that, in the thirty counties where she has the majority, her sittings must be 1,196,619 more than those provided by the rest. The greater portion of this excess is to be found in the counties of Middlesex (111,724), Kent (100,064), Sussex (74,132), Suffolk (73,456), Surrey (65,431), Devonshire (64,091), Hampshire (63,317), Norfolk (61,507), Somerset (61,157), and Essex (56,250). I dare say, that upon closer examination, certain peculiarities, of social condition or otherwise, would be discovered as distinguishing the counties in which dissent is powerful, from those in which the Church predominates.

TABLE C.

Proportion Per Cent. of Population Accommodated by each Religious Body.

Counties.	Proportion Per Cent. of Population accommodated by the								
	Church of England.	Scottish Presbyterians	Independents.	Baptists.	Wesleyan Methodists.	Calvinistic Methodists.	Roman Catholics.	Other Bodies.	Total.
Bedford	35.2	....	5.0	12.0	15.4	....	....	4.4	72.0
Berks	41.1	....	5.6	5.5	10.4	0.6	0.7	1.8	65.7
Buckingham	41.1	....	6.8	10.3	11.2	0.1	0.3	1.7	71.5
Cambridge	32.2	....	6.6	9.8	9.9	0.3	0.2	1.3	60.3
Chester	27.6	0.5	4.8	1.6	17.7	0.6	1.1	2.7	56.6
Cornwall	28.8	....	2.6	1.7	43.1	0.3	0.4	1.8	78.7
Cumberland.....	30.0	3.1	3.7	1.2	13.6	....	1.5	3.4	56.5
Derby	30.3	....	4.5	3.9	24.4	0.1	0.8	1.9	65.9
Devon	39.1	....	7.4	4.5	11.4	....	0.2	4.3	66.9
Dorset	51.1	....	10.5	2.1	11.5	....	0.9	2.2	78.3
Durham	17.6	1.7	2.4	1.5	20.9	....	1.2	1.2	46.5
Essex	40.0	....	13.0	4.5	4.1	0.1	0.6	2.5	64.8
Gloucester	36.0	....	7.7	6.0	9.8	0.8	0.8	2.9	64.2
Hereford	47.3	....	2.5	3.3	9.1	0.8	0.8	2.7	66.5
Hertford	33.0	....	8.2	7.5	5.8	0.5	0.3	2.1	57.4
Huntingdon.....	39.7	....	3.2	13.0	11.9	....	....	5.7	73.5
Kent	34.7	0.3	4.5	4.5	7.0	0.3	0.6	1.2	53.1
Lancaster.....	19.1	0.8	4.1	1.8	8.8	0.5	2.9	2.0	40.0
Leicester	38.3	....	5.6	10.8	14.5	0.1	1.1	2.0	72.4
Lincoln	40.5	....	2.8	3.5	29.0	0.1	0.6	0.9	77.4
Middlesex	18.7	0.8	4.8	2.1	2.2	0.3	1.0	1.5	31.4
Monmouth	22.9	....	9.5	18.6	14.9	4.9	1.8	1.2	73.8
Norfolk	42.3	....	3.5	4.7	17.3	0.4	0.3	2.2	70.7
Northampton	43.7	....	8.4	11.0	10.0	0.1	0.3	2.0	75.5
Northumberland	18.1	10.6	2.0	1.5	13.7	....	1.6	1.3	48.8
Nottingham.....	28.5	....	3.2	5.3	20.2	....	0.7	2.4	60.3
Oxford	46.5	....	4.9	4.4	8.9	0.1	0.8	2.3	67.9
Rutland	58.1	....	4.7	8.5	8.9	....	....	0.4	80.6
Salop	41.6	....	5.2	2.6	14.5	0.8	0.8	0.9	66.4
Somerset	40.9	....	6.4	5.0	12.4	6.2	0.5	2.5	67.9
Southampton	37.2	....	8.0	3.7	7.4	0.1	0.7	1.6	58.7
Stafford	26.9	0.2	3.5	1.7	15.3	....	1.6	0.8	50.0
Suffolk.....	47.9	....	9.3	7.7	7.1	....	0.1	1.8	73.9
Surrey	22.2	0.1	4.6	2.9	2.6	0.1	1.2	1.1	34.8
Sussex	39.3	....	6.1	3.6	3.8	0.6	0.3	2.8	56.5
Warwick	27.5	0.1	4.5	3.3	5.6	0.1	1.4	3.4	45.9
Westmorland	42.5	0.7	3.1	1.7	14.6	....	1.2	5.2	69.0
Wilts	46.1	....	8.6	9.7	11.1	0.1	0.3	1.4	77.3
Worcester	32.0	0.2	2.8	3.7	10.3	1.2	1.0	1.9	53.1
York, East Riding	32.1	0.3	5.5	1.8	29.0	....	1.1	1.6	71.4
„ City	33.6	....	7.6	....	17.8	....	2.7	3.4	65.1
„ North Riding	40.0	0.2	5.7	1.6	34.6	....	1.9	3.0	87.0
„ West Riding	21.7	0.1	5.6	3.0	21.0	....	0.7	1.9	54.0
North Wales	28.1	....	12.8	5.9	13.8	27.0	0.2	1.3	89.1
South Wales	25.1	....	20.5	14.0	7.4	14.7	0.3	2.2	84.2
England and Wales	29.7	0.5	6.0	4.2	12.2	1.4	1.0	2.0	57.0

This paper is already too long ; but it can scarcely be concluded without some reference to the *rate of progress* of the different religious bodies. The information furnished by the censuses, on this point, is not, it is true, of the best description, as it is derived entirely from the returns of the *dates* at which existing edifices were erected or appropriated to religious uses. Thus, it appears that, of the 14,077 churches and chapels belonging to the Church of England, there were erected or opened

Before 1801	9,667	Between 1831 and 1841.....	667
Between 1801 and 1811.....	55	„ 1841 „ 1851.....	1,197
„ 1811 „ 1821.....	97	At periods not mentioned....	2,118
„ 1821 „ 1831.....	276		
			14,077

A similar statement respecting the buildings of other bodies would shew no more than 3,427 in 1801, and no less than 20,390 in 1851; being a surprising increase if correct; but no doubt can be entertained that, from the temporary and shifting character of the places which dissenters use for worship, it is very difficult to draw any satisfactory inference from the mere dates at which their present structures or rooms, were first built or adapted. With respect, however, to the Church of England, whose edifices are more permanent, both as to their substance and purpose, we may safely accept the above facts as the basis of an estimate of the progress of the Church throughout the past half century. Distributing, therefore, over the various periods, the 2,118 churches concerning which we have no information as to date, and assuming that the proportion of sittings to a church was the same, on an average, at each of the previous periods, as it was in 1851, we get the following view of the extent of accommodation furnished by the Church of England at each decennial interval :—

	Churches	Sittings.		Churches.	Sittings.
In 1801	11,379	4,289,883	In 1831.....	11,883	4,481,891
„ 1811	11,444	4,314,388	„ 1841.....	12,668	4,775,836
„ 1821	11,558	4,357,366	„ 1851.....	14,077	5,317,915

Thus, since 1801, the Church has increased her accommodation to the extent of 1,028,032 sittings ; of which number, no fewer than 836,024, have been supplied since 1831. There can be no question that, during the same periods, the amount of provision furnished by dissenters has been still larger, though, for the reason stated, I am disinclined to hazard any calculation of precise numbers. If the dates were to be relied upon, the increase would be from 881,240 sittings in 1801, to 4,984,648 in 1851; but, although the latter number represents correctly their position at the present time, it is very likely that the former number represents inadequately their position fifty years ago. In speaking, therefore, of the rate of past progress, we can speak with confidence only with respect to the Church of England; and the facts as to her achievements for the last half century present a very chequered history. For, if the records of the last twenty years are full of glorious effort and success, the story of the previous thirty years is almost a blank with reference to church

extension. It is true there were some parliamentary grants to aid this object; but we see that only 504 churches were erected, or accommodation for about 192,008 persons, out of the 5,004,261, who had been added to the population since 1801, of whom at least two millions and a half would require provision to be made for them. The consequence of this inertia was, that the Church, which in 1801, provided for 48·2 per cent. of the population, provided in 1831, for no more than 32·3 per cent.; and even the prodigious efforts of the last twenty years have not sufficed to prevent the proportion sinking yet lower, viz., to 29·7 per cent. During the last *ten* years, however, the contest between the Church and population has been much more equal, and there seems to be a probability that in the course of the next decennial period, the tide of battle will be turned the other way. Few, perhaps, will be inclined to lament that, while the Church of England was inactive or struggling unsuccessfully against the march of population, the activity of various dissenting bodies furnished to multitudes of people, the spiritual instruction which they otherwise could not have received. Indeed, it may be questioned whether service was not actually rendered thus toward the Church herself; whether the dissenters did not really act as pioneers before her, reclaiming from utter heathenism many who would be prepared in this way for a subsequent communion with her. But, however this may be, it can scarcely be a subject for anything but pleasure that, the ground which would otherwise have been totally uncultivated, was occupied to so considerable an extent by the dissenters. I have before observed that the rate of their increase at various periods cannot, to my own mind, be satisfactorily made out; but it seems not unlikely that since 1831, they may have added as many as 2,000,000 sittings to the previous amount of their provision. So that, if it can be permitted to take an aggregate view of the accommodation furnished by all religious bodies together, it will be gratifying to find that there is now considerably more accommodation in proportion to the population than existed twenty years ago. And it is a singular fact, which can scarcely have escaped observation, that the wonderful work of these twenty years has been going on simultaneously with the progress of very general controversy, not only on the subject of religion itself, but with reference even to the very constitution of the bodies which have thus so rapidly extended their dominions. Internal conflict has been so far from preventing external conquest, that while the present activity of controversy has seldom been surpassed, the existing effort towards expansion has never probably been equalled. We seem to be rivaling, in another sphere, the spectacle exhibited by France in her first Revolution, when, though torn by intestine feuds, her mighty energy not only cleared her soil from foreign enemies, but even pushed her arms triumphantly beyond her borders.

But these remarks are scarcely, perhaps, of a statistical character; and as the proper limits of this paper have been evidently reached, I can only, in conclusion, express a hope that the few facts and estimates offered to the Society, more for the sake of eliciting discussion than with the design of communicating positive information, may prove not altogether uninteresting nor undeserving its attention.

The Progress and Direction of British Exports, and the Influence thereon of Free Trade and Gold. By RICHARD VALPY, ESQ.

[Read before the Statistical Section of the British Association for the Advancement of Science, at Liverpool, on the 23rd September, 1854.]

THE returns of the exports of British and Irish produce from the United Kingdom to foreign countries and British possessions, in each year from 1840 to 1853, which are given in the "Statistical Abstract," published by the Board of Trade, exhibit so remarkable a progress, that it is proposed in the present paper to examine some of the results, and to trace the influence of free trade and gold.

The years embraced in the period referred to, must always be memorable in the annals of our commerce. The first relaxations in the principles by which our foreign trade was governed, were made about ten years before 1840, but the great modifications commenced in 1842. During the ten succeeding years were accomplished the great changes for "setting free the springs of British industry;" and in 1852 the great parties in Parliament may be said to have united in opinion upon a commercial policy, which, for more than twenty years, had been fiercely contested.

Some idea of the magnitude of British exports may be formed from the fact that their aggregate amount, in the comparatively short period of fourteen years, from 1840 to 1853, exceeded the vast capital of our national debt by nearly one hundred millions sterling. The total declared value of British and Irish produce exported, during that period, was 877,299,124*l.*, and the highest amount of the national debt, during the same years, was 791,809,338*l.* in the year 1848.

In 1853 the declared value of the exports of British and Irish produce amounted, in pounds sterling, to but little short of one hundred millions. It is a very striking sign of commercial power and enterprize for any one country to send from its ports, in a single year, so surprising an amount of native produce and manufactures. A country with so extensive a foreign trade must possess the means of profitably employing its population. And the nation that can the most successfully compete in the markets of the world, must be the one that supplies, the most advantageously, its consumers at home.

It may be well to consider the progress of our exports, first, in the total amount, then, in the trade with foreign countries and the British possessions respectively, and lastly, in its coincidence with the adoption of free trade, and the recent discoveries of gold.

From 1840 to 1853, the annual exports of our own produce have risen from 51,406,430*l.* to 98,933,781*l.*, which gives an actual increase of no less than 47,527,351*l.*, or nearly 93 per cent. If the trade of the several years is compared, it will be seen, that, of the fourteen years, in only three was there a falling off in the exports.

The increase in some of the years was very large, having amounted to 6,304,583*l.* in 1844, 10,746,580 in 1849, 7,771,860*l.* in 1850, and 20,856,927*l.* in 1853.

The following is a statement of the total declared value of British and Irish produce exported from the United Kingdom, in each year from 1840 to 1853, with the annual increase or decrease :—

Years.	Total Exports.	Increase.	Decrease.
	£	£	£
1840.....	51,406,430	....	....
1841.....	51,634,623	228,193	....
1842.....	47,381,023	....	4,253,600
1843.....	52,279,709	4,898,686	....
1844.....	58,584,292	6,304,583	....
1845.....	60,111,082	1,526,790	....
1846.....	57,786,876	....	2,324,206
1847.....	58,842,377	1,055,501	....
1848.....	52,849,445	....	5,992,932
1849.....	63,596,025	10,746,580	....
1850.....	71,367,885	7,771,860	....
1851.....	74,448,722	3,080,837	....
1852.....	78,476,854	3,628,132	....
1853.....	98,933,781	20,856,927	....

The "Statistical Abstract" distinguishes the value of exports to foreign countries and to the British possessions, and it is interesting to observe the relative importance and development of our trade in two directions.

It may excite some surprise to learn, that notwithstanding the prodigious increase in our exports to Australia in 1853, the proportion sent to foreign countries and to British possessions, was almost identical in 1853 and 1840; and the rate of increase in the two divisions of trade was nearly equal. In 1840, foreign countries took 67 per cent. of our exports, and British possessions 33 per cent. In 1853, the proportions were 66 and 31 per cent. respectively. The exports in 1853, show an increase over 1840 of 90 per cent. to foreign countries, and 97 per cent. to British possessions. The results are not so favourable for the British possessions if the year 1853 is omitted from the comparison. Before that year the increase in the relative proportion of our trade to foreign countries and to British possessions was in favour of the former, and our trade with foreign countries increased much more than our trade to British possessions.

The following per-centages show the relative proportions of our trade with foreign countries and British possessions, and its progress in each direction, in different years and periods.

Proportions of Declared Value of British and Irish Produce Exported to Foreign Countries and British Possessions.

Years and Periods.		To Foreign Countries.	To British Possessions.
		Per Cent.	Per Cent.
1840.....		67.	33.
1852.....		75.	25.
1853.....		66.	31.
Annual Average	1840-44.....	67.	33.
	1845-49.....	74.	26.
	1850-53.....	72.	28.

Rates of Increase or Decrease in the Declared Value of British and Irish Produce Exported to Foreign Countries and British Possessions.

Years and Periods.	To Foreign Countries.	To British Possessions.
	Per Cent.	Per Cent.
1853 over 1840	+ 90.	+ 97.
1852 over 1840	+ 70.	+ 15.
Annual Average. { 1845-49 over 1840-44 }	+ 24.	- 0.5
{ 1850-53 over 1840-44 }	+ 70.	+ 48.

The total of exports to the British possessions in 1840, was not again surpassed or equalled for the space of ten years until 1850. During those years there were occasions of a considerable diminution in the trade with our possessions, to the extent in one year, 1848, as compared with 1840, of more than 4,000,000*l.*, or nearly 25 per cent.

The total declared value of the exports of British and Irish produce to foreign countries and to British possessions respectively, in each year from 1840 to 1853, and on an annual average, when divided into three periods, is given in the next table.

Years.	To Foreign Countries.	To British Possessions.
	£	£
1840	34,431,804	16,974,626
1841	36,771,580	14,863,043
1842	34,019,203	13,361,820
1843	37,220,289	15,051,420
1844	42,077,926	16,506,366
1845	43,253,688	16,857,394
1846	41,812,779	15,974,097
1847	43,916,296	14,926,081
1848	46,001,539	12,847,906
1849	47,884,132	15,711,893
1850	52,738,986	18,628,899
1851	54,931,683	19,517,039
1852	58,579,895	19,496,959
1853	65,551,579	33,382,202
Annual Average { 1840-44...	34,905,760	15,351,455
{ 1845-49...	43,373,687	15,263,474
{ 1850-53...	57,950,536	22,756,275

A comparison of the total value of our exports, when divided between foreign countries and British possessions, may be said to show that on an average, and in round numbers, about two-thirds find their way to foreign countries, and one-third to British possessions.

We may further proceed in an examination of the distribution of our exports to foreign countries and British possessions, by considering them in relation to the chief geographical divisions, and the principal countries.

With respect to foreign countries, the bulk of our exports is sent to Europe and North and South America. To each of these divisions our exports have made great progress between 1840 and 1853, but more particularly, as might be expected, to North America.

In 1840, and until 1849, Europe received a much larger amount from us than both North and South America. In 1847, our exports to North America were greatly increased, and in 1849, our transatlantic trade, both North and South, nearly equalled the trade with Europe, and exceeded it in 1853.

The per-centage rates of proportion and increase for each of these divisions, and the declared value of British and Irish produce exported to them severally, are given in the next three tables.

Per Centage Proportion of British Exports to Foreign Countries, sent to

	In 1840.	In 1853.	Annual Average.		
			1840-44.	1845-49.	1850-53.
	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Europe	57·	42·	62·	53·	44·
North America	20·	40·	21·	25·	33·
South America	16·	11·	14·	12·	12·
	93·	93·	97·	90·	89·
To other parts	7·	7·	3·	10·	11·
	100·	100·	100·	100·	100·

Per Centage Increase of British Exports to Foreign Countries, sent to

	1853 over 1840.	Annual Average.	
		1845-49 over 1840-44.	1850-52 over 1840-44.
	Per Cent.	Per Cent.	Per Cent.
Europe.....	38·	5·	19·
North America	244·	50·	163·
South America.....	30·	7·	45·

Total Declared Value of British and Irish Produce Exported from the United Kingdom to Europe, and North and South America, in each Year from 1840 to 1853, and on an Annual Average for Three Periods.

Years.	Europe.	North America. (United States, Mexico, Cuba, and Haiti.)	South America. (New Grenada, Venezuela, Brazil, Uruguay, Buenos Ayres, Chili, and Peru.)
	£	£	£
1840.....	19,767,106	6,863,849	5,734,507
1841.....	21,107,509	8,598,126	4,679,023
1842.....	22,234,371	4,757,610	4,593,086
1843.....	22,455,078	6,584,457	4,917,990
1844.....	23,280,093	9,606,105	4,928,803
1845.....	24,130,916	9,154,056	5,432,057
1846.....	24,349,960	8,114,370	5,181,328
1847.....	22,714,380	12,163,492	4,854,332
1848.....	20,205,563	11,332,082	4,797,669
1849.....	23,292,316	13,895,546	6,322,565
1850.....	25,226,343	16,467,977	6,087,926
1851.....	24,967,099	16,344,200	7,254,771
1852.....	26,126,978	18,218,562	7,884,727
1853.....	27,345,001	25,709,035	7,477,991
Annual Average. $\left\{ \begin{array}{l} 1840 \\ \text{to} \\ 1844 \end{array} \right\}$	21,768,831	7,282,029	4,950,682
$\left\{ \begin{array}{l} 1845 \\ \text{to} \\ 1849 \end{array} \right\}$	22,938,627	10,931,969	5,317,590
$\left\{ \begin{array}{l} 1850 \\ \text{to} \\ 1853 \end{array} \right\}$	25,916,355	19,184,938	7,176,354

This table, throughout, exhibits a very marked and progressive increase, which is highly favourable for so short a period as fourteen years. The total amount of our average annual exports to these three divisions of foreign countries, was higher by nearly 18,000,000*l.* in the four years from 1850 to 1853, than in the five years from 1840 to 1844. A few countries are wanting to give a complete view of our trade with the whole of North and South America, but they are comparatively unimportant, and the absence of the figures does not affect the specified results.

A considerable portion of our trade with Europe is one of transit through the contiguous maritime countries to inland parts of the continent, and, therefore, the amount of our exports to particular countries does not always represent our actual trade with those countries alone. For instance, the Hanse Towns, to which we export largely, are known to be only entrepôts, whence our merchandise finds its way to the Baltic countries and Northern Germany. Prussia, to which our direct exports are but small, is no doubt chiefly supplied with British goods through the Hanse Towns. Holland is another part of Europe through which our goods are transmitted, to Central Germany, perhaps for the most part. And Belgium and France also receive some amount of our exports in a similar manner.

In order to trace the distribution of British exports in different parts of Europe, a table has been prepared to show the amount of our trade with Northern, Central and Southern Europe. The countries allotted to each division appear to be appropriate, when their localities and the probable course of the trade in transit are considered. The amounts severally arrived at for the three divisions are more nearly equal than might have been expected. The table is for each year from 1840 to 1853, and on an annual average for three periods:—

YEARS.	NORTHERN. (Russia, Sweden, and Norway, Denmark, Prussia, Hanover, and Hanse Towns.)	CENTRAL. (Holland, Belgium, and France.)	SOUTHERN. (Portugal, Spain, Sardinia, Austria, Tuscany, Papal States, Two Sicilies, Turkey, &c.)	TOTAL.
	£	£	£	£
1840.....	7,629,489	6,674,625	5,462,992	19,767,106
1841.....	8,132,261	7,578,919	5,396,329	21,107,509
1842.....	8,993,625	7,866,791	5,373,955	22,234,371
1843.....	9,089,416	7,084,268	6,281,394	22,455,078
1844.....	9,333,816	7,259,480	6,686,797	23,280,093
1845.....	9,795,086	7,709,331	6,626,499	24,130,916
1846.....	9,484,294	7,450,466	7,415,200	24,349,960
1847.....	9,155,451	6,631,162	6,927,767	22,714,380
1848.....	7,749,281	4,671,747	7,784,535	20,205,563
1849.....	8,253,058	6,908,790	8,130,468	23,292,316
1850.....	9,684,034	7,080,825	8,461,484	25,226,343
1851.....	9,833,234	6,555,637	8,578,228	24,967,099
1852.....	9,811,843	7,917,761	8,397,374	26,126,978
1853.....	10,499,401	8,461,102	8,384,498	27,345,001
Annual Average. { 1840 to 1844 }	8,635,721	7,292,816	5,840,293	21,768,830
{ 1845 to 1849 }	8,887,434	6,674,299	7,376,894	22,938,627
{ 1850 to 1853 }	9,957,128	7,503,831	8,455,396	25,916,355

The per-centage proportions calculated upon this table, show that the northern countries took rather the largest share both in 1840 and 1853, and that the shares taken by the central and southern countries, which exhibited some difference in favour of the central countries in 1840, became very nearly equal in 1853, by the greater increase of trade with the southern countries.

The following were the per-centage proportions of our exports to each of the divisions of Europe in 1840 and 1853:—

Divisions of Europe.	1840.	1853.
	Per Cent.	Per Cent.
Northern	38·	38·
Central	34·	31·
Southern	28·	31·
	100·	100·

With respect to the increase of our trade with the separate divisions, although each received more in 1853 than in 1840, the southern countries made the greatest advance, as the following per-centages exhibit:—

Divisions of Europe.	Increase in 1853 over 1840.
	Per Cent.
Northern	38·
Central	27·
Southern	54·

The trade with Southern Europe shows an increase in the years 1848 and 1849, when our exports to Northern and Central Europe were so much lessened by political events.

If we review the results of our trade with the separate countries of Europe, as classified in the preceding divisions, it may be remarked that of the northern countries, Russia is the only one to which our exports have decreased, and, in fact, it is almost the only country in Europe to which we have not sent more of our produce than we did about the year 1840. The Hanse Towns receive the chief proportion of our exports to Northern Europe, and so large is our trade to them, that of our exports to all Europe, about one-fourth passes through the Hanseatic ports. Of the central countries, we have improved our trade with Holland and Belgium, but not much with France. Of the southern countries, Portugal has been almost stationary, whilst to Spain and Sardinia we have made much larger exports, and also to Turkey.

It has already been shown, with reference to our trade with the British possessions, that between 1840 and 1853, our exports to the whole of the British possessions rather declined than otherwise.

If the trade with the several possessions is examined, in none of them does there appear to have been a progressive increase in the consumption of British produce from 1840 to 1850. During that period a considerable decrease took place in the exports to the West Indies; and although no continued decrease occurred with any other colony, none can boast of a continued increase, or claim more than an average amount of trade, subject to much annual variation. In 1850 an increase occurred in our exports to all the British possessions out of Europe, and the subsequent years exhibit a continued prosperity of trade, except to the West Indies, to which there was a decrease in 1852 and 1853, but not to the extent that might have been expected.

From 1840 to 1853, the East Indies have annually taken the largest portion of our exports to our possessions, but in 1853 the exports to India were largely exceeded by those to Australia.

The relative demand for British produce in the several British possessions is shown by the following per-centage proportions of exports to such places:—

Exports to	In 1840.	In 1852.	In 1853.
	Per Cent.	Per Cent.	Per Cent.
Possessions in Europe.....	10·	7·	5·
North American Colonies	17·	16·	15·
West Indies.....	21·	10·	6·
Cape of Good Hope	2·	5·	4·
East Indies (including Mauritius)	37·	39·	26·
Australia	12·	22·	43·
Other possessions	1·	1·	1·
	100·	100·	100·

The per-centage increase or decrease of the exports to the several colonies is given in the next table:—

Exports to	1852 over 1840.	1853 over 1840.	Annual Average.	
			1845-49 over 1840-44.	1850-53 over 1840-44.
	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Possessions in Europe	— 14·	— 9·	— 9·	— 15·
North American Colonies.....	+ 7·	+ 72·	+ 11·	+ 45·
West Indies	— 46·	— 46·	— 25·	— 28·
Cape of Good Hope	+ 155·	+ 190·	+ 42·	+ 128·
East Indies (including Mauritius)	+ 19·	+ 35·	— 2·	+ 26·
Australia	+ 105·	+ 607·	+ 22·	+ 368·

It will be noticed that there was a very large increase in the exports in 1853, to other colonies as well as to the marvellous land of Australia. The Cape of Good Hope has made a surprising progress in its trade with this country since 1840; and the North American colonies and the East Indies both offered much better markets for our produce in 1853, and on the average, since 1850, than they did a few years ago. The increase to the North American colonies is in reality probably greater than the accounts can show, because considerable quantities of British goods are not shipped there direct, but are passed on from ports in the United States.

The declared value of British produce exported from the United Kingdom to British possessions, as grouped in the comparisons just made, appears in the following table for each year from 1840 to 1853, and on an annual average of three periods.

Years.	Possessions in Europe.	North American Colonies.	West Indies.	Cape of Good Hope.	East Indies and Mauritius.	Australia.
	£	£	£	£	£	£
1840.....	1,724,139	2,847,913	3,574,970	417,091	6,349,004	2,051,625
1841.....	1,747,031	2,947,061	2,504,004	384,574	5,935,140	1,336,626
1842.....	1,674,973	2,333,525	2,591,425	369,076	5,414,810	958,952
1843.....	1,914,248	1,751,211	2,882,441	502,577	6,662,533	1,307,062
1844.....	1,763,264	3,070,861	2,451,477	424,151	7,981,216	791,994
1845.....	1,540,584	3,555,954	2,789,211	648,749	7,048,837	1,244,121
1846.....	1,447,024	3,308,059	2,253,420	480,979	6,744,687	1,441,640
1847.....	1,348,298	3,233,014	2,102,577	688,208	5,693,668	1,644,170
1848.....	1,908,138	1,990,592	1,434,477	645,718	5,246,555	1,463,931
1849.....	1,721,155	2,280,386	1,821,146	520,896	7,037,296	2,080,364
1850.....	1,344,854	2,335,051	2,030,229	796,600	8,391,391	2,602,253
1851.....	1,619,549	3,813,707	2,201,032	752,393	8,039,551	2,807,356
1852.....	1,470,851	3,065,364	1,908,552	1,064,283	7,582,600	4,222,205
1853.....	1,555,420	4,898,544	1,906,639	1,212,630	8,571,574	14,513,700
Annual Average. { 1840 to 1844 }	1,764,731	2,590,114	2,800,863	419,594	6,468,541	1,289,252
{ 1845 to 1849 }	1,593,039	2,873,601	2,080,166	596,910	6,354,208	1,574,845
{ 1850 to 1853 }	1,497,668	3,753,166	2,011,613	956,476	8,146,279	6,036,378

Leaving now the progress and direction of British exports, it will not be uninteresting to examine how far the extension of our commerce has been the result of the changes in our commercial policy, and the recent increased supply of gold.

To obtain a just estimate of the effect of free trade, a more extended period than from 1840 to 1853, must be taken into review. The annual exports from 1815 to 1853, will exhibit the state of our commerce during several years before and after the date of commercial reform. A comparison of the declared value of British and Irish produce, exported from 1815 to 1853, discloses the fact that for twenty years after 1815, the exports of our produce made no progress whatever, and their average annual amount during those years, was actually less, by nearly 5 per cent., than in the fourteen years of war from 1801 to 1814.

In 1815, we exported produce to the value of 51,603,028*l.*, from which there was a fall of 10,000,000*l.*, or to 41,657,873*l.*, in 1816: and, with many fluctuations below that amount, the exports of 1816 were not again equalled till the year 1834, except in the one instance of 1818. In 1832, our exports were at the low sum of 36,450,594*l.* It was only in the year 1833 that, since the termination of the war, an increase first commenced in the amount of our exports, which has proved permanent and progressive. The exports of 1833 reached 39,667,347*l.*, and have ever since exceeded that amount, which is a circumstance to be noted, as, before 1833, two or three instances occurred of our exports receding to, and below the level of, an inferior year.

It is not, of course, to be inferred that the progress of our trade

has been uninterrupted subsequently to 1833, but from that year, there is no doubt, that, with largely increased exports of our produce, our commerce has fluctuated less, and has exhibited more rapid recovery from occasional depression.

The next table shows the declared value of British and Irish produce exported in each year from 1815 to 1853:—

Years.	Value.	Years.	Value.
	£		£
1815.....	51,603,028	1835.....	47,372,270
1816.....	41,657,873	1836.....	53,368,571
1817.....	41,761,132	1837.....	42,069,245
1818.....	46,603,249	1838.....	50,060,970
1819.....	35,208,321	1839.....	53,233,580
1820.....	36,424,652	1840.....	51,406,430
1821.....	36,659,630	1841.....	51,634,623
1822.....	36,968,964	1842.....	47,381,023
1823.....	35,458,048	1843.....	52,279,709
1824.....	38,396,300	1844.....	58,584,292
1825.....	38,877,388	1845.....	60,111,082
1826.....	31,536,723	1846.....	57,786,876
1827.....	37,181,335	1847.....	58,842,377
1828.....	36,812,756	1848.....	52,849,455
1829.....	35,842,623	1849.....	63,596,025
1830.....	38,271,597	1850.....	71,367,885
1831.....	37,164,372	1851.....	74,448,722
1832.....	36,450,594	1852.....	78,076,854
1833.....	39,667,347	1853.....	98,933,781
1834.....	41,649,191		

If the thirty-nine years, from 1815 to 1853, are divided, as equally as they can be, into two periods, the average annual exports will be found to be 38,709,756*l.* in the twenty years from 1815 to 1834, and 60,205,528*l.* in the nineteen years from 1835 to 1853, being an increase of more than 21,000,000*l.*, or 55 per cent. in favour of the last period.

Taking the mean population of the United Kingdom for these periods at 21,400,000 and 27,000,000, the averages will give, as the proportion of exports per individual of the total population, about 1*l.* 16*s.* in the first, and 2*l.* 2*s.* in the second period.

The comparative movement of exports, between 1815 and 1853, may also be tested by dividing the years into quinquennial periods, and showing the average annual amounts. The following are the figures, and the per-centage increase or decrease of each successive period.

Quinquennial Periods.	Average Annual Exports.	Increase.	Decrease.
	£	Per Cent.	Per Cent.
1815 to 1819	43,366,720	....	....
1820 „ 1824	36,781,519	....	15.
1825 „ 1829	36,050,165	....	2.
1830 „ 1834	38,640,620	....	....
1835 „ 1839	49,220,927	27.	....
1840 „ 1844	52,257,215	6.	....
1845 „ 1849	58,637,161	12.	....
1850 „ 1853 (4 yrs.)	80,706,810	37.	....

The averages, for the first four quinquennial periods, testify to the declining and low amount of exports from 1815 to 1834, whereas a progressive increase appears in each of the last four periods, from 1835 to 1853.

There is every probability that, of the principal free trade measures, the virtual free admission of corn into this country has been one of the chief causes of the great increase in our exports. The increase in the imports of corn has been so large since the change of law, that it is deserving of special attention, and therefore the total annual imports of all kinds of corn and flour, since 1840, is here stated.

Years.	Quantities.	Years.	Quantities.
	Impl. Qrs.		Impl. Qrs.
1840.....	3,920,014	1847.....	11,912,864
1841.....	3,627,522	1848.....	7,528,472
1842.....	3,697,279	1849.....	10,669,661
1843.....	1,433,891	1850.....	9,019,590
1844.....	3,030,681	1851.....	9,618,026
1845.....	2,429,916	1852.....	7,746,669
1846.....	4,752,174	1853.....	10,173,135

The averages of the two periods of seven years are 3,270,211 and 9,524,052 imperial quarters, which give an increase of 6,253,841, or 52 per cent. in the last period.

If our annual exports to the United States are examined, it will be observed that they rose to a high amount in 1847, the first year of large imports of corn from that country, and in each subsequent year the same coincidence has occurred.

At about the same period, two of the chief staple products of England and the United States, viz., iron and corn, were admitted into the respective countries at moderate duties, and the result has been the exchange, between the two countries, of those articles in very large quantities.

In 1846, the tariff of the United States was much modified, and the effect of the lower duties upon the chief articles of our exports to that country may be seen in the following table:—

Produce of the United Kingdom Exported to the United States.

Years.	Cottons Entered by the Yard.	Cottons Entered at Value.	Earthenware and Porcelain.	Hardwares and Cutlery.	Iron and Steel Wrought and Unwrought.
	Yds.	£	£	Cwts.	Tons.
1846.....	37,105,895	187,915	323,155	121,065	60,083
1847.....	105,423,188	325,993	356,747	146,331	137,983
1848.....	70,840,207	341,425	336,754	142,171	282,099
1849.....	87,160,137	341,230	371,675	164,266	366,656
1850.....	104,229,982	369,358	499,674	193,509	367,864
1851.....	76,580,430	401,529	540,251	183,891	464,559
1852.....	110,994,733	552,185	516,623	157,116	501,158
1853.....	193,328,908	655,515	650,247	201,825	654,531

Produce of the United Kingdom Exported to the United States.—Continued.

Years.	Linens Entered by the Yard.	Silk Manufactures.	Woollens Entered by the Piece.	Woollens Entered by the Yard.
	Yards.	£	Pieces.	Yards.
1846.....	26,826,843	225,364	261,209	8,289,061
1847.....	36,020,778	349,413	412,361	21,402,346
1848.....	30,930,554	218,633	321,598	15,583,876
1849.....	42,649,803	268,151	525,516	24,462,488
1850.....	50,807,392	446,433	732,876	32,856,355
1851.....	48,555,732	468,268	571,414	36,752,251
1852.....	56,085,259	464,590	716,459	47,063,242
1853.....	65,018,195	559,391	869,144	42,810,694

The example of this country, in greatly reducing import duties, has been followed in addition to the United States, by Norway, Denmark, Spain, Sardinia, and Turkey. In all of these countries, but especially the last two, duties have been much lowered, and our exports to them have experienced a corresponding increase. The like system of reform has obtained in other countries also, but not as yet to the same extent.

With reference, lastly, to gold, the prodigious production of which in the last few years is not unnaturally pointed at, as the cause of the great prosperity of our commerce, it may be first observed that the discovery of Californian gold, in 1848, could not have produced much effect upon the markets of the United States and this country before 1850. This is apparent from the following statement of our exports of foreign gold. The imports of gold are not known:—

1848.	1849.	1850.	1851.	1852.	1853.	Half Year to 5th July, 1854.
Ounces.	Ounces.	Ounces.	Ounces.	Ounces.	Ounces.	Ounces.
176,422	98,905	439,288	550,724	520,199	2,685,637	2,353,563

The trade of this country with the United States had increased considerably before the influence of gold could have been sensibly felt, and, therefore, a large portion of the recent very large increase of our exports to the United States, must be attributed to our easier access to the American markets, because of moderated duties.

Under higher duties, domestic produce would, to a larger extent, have supplied those markets, but not without an enhanced cost to the consumers.

In other foreign countries, gold cannot be considered as having stimulated their trade with England to any great extent; and, yet, if we except the United States, it will be found that there was still an increase of nearly 44 per cent., or from 29,148,784*l.* to 41,893,152*l.*, in our exports to foreign countries between 1840 and 1853.

If gold has operated less in other foreign countries, than in the United States, in extending commercial transactions, it must, however, be allowed to have contributed almost alone to the great expansion of the Australian trade in 1852 and 1853.

Without the aid of gold, our exports to Australia would not probably have experienced any considerable development. Nevertheless, it may be questioned whether the enlarged and cheaper command of commodities at home, under free trade, has not materially assisted us in meeting the sudden and large Australian demand, and even, perhaps, augmented it by means of an ample and cheap supply.

The extent to which gold has recently stimulated our foreign trade must of course be matter of conjecture, but, as a speculation upon an interesting subject, we may be permitted to venture upon a few calculations.

Assuming that gold first led to an increase of demand in the United States in 1850, and in Australia in 1852, to estimate the consequent extension of our exports to those countries, we must compare the difference in the total increase since those years, and in like periods previously.

The total exports of our produce to the United States amounted,

				£
In the four years from	1850 to	1853 to	69,481,101	
"	"	1846 "	1849 "	39,340,558
"	"	1842 "	1845 "	23,623,239

Hence we ascertain that in the period during the operation of gold, the total increase was 30,140,543*l.*, and in the previous period 15,717,319*l.*

It will not, therefore, be unreasonable to infer that our exports from 1850 to 1853 were increased, irrespective of gold, by the same amount as from 1846 to 1849. Deducting, then, from the total increase of 30,140,543*l.*, from 1850 to 1853, the sum of 15,717,319*l.*, as the increase from ordinary causes, there would remain about 14,500,000*l.* to be considered as the amount by which our exports to the United States have been stimulated by gold during the last four years. The portion in each of the years, having reference to the annual exports, might be thus divided—

		£
1850	2,000,000	
1851	2,000,000	
1852	3,000,000	
1853	7,500,000	
		<hr/>
		14,500,000

The total increase of exports between 1850 and 1853 will, therefore, give the proportions of 52 per cent. for the ordinary increase of trade, and 48 per cent. for the effect of gold.

These calculations, with respect to the United States, would not be much affected if a deduction were made from the amount of exports, on account of goods shipped from this country to the United States for the North American colonies; as a sum, for instance, of 1,000,000*l.* would be considerable as an addition to the trade of the colonies, but not much of a deduction from the United States' trade.

With respect to Australia, 1852 and 1853 can alone be considered as *golden* years. Taking, therefore, periods of only two years, instead of four, as in the case of the United States, it will be seen that the

total increase of exports to Australia, in 1852 and 1853, as compared with 1850 and 1851, was 13,326,296*l.*; and in 1850 and 1851, over 1849 and 1850, 1,865,314*l.* Admitting, then, that the increase in 1850 and 1851 was the ordinary increase in 1852 and 1853, and deducting that sum, of 1,865,314*l.*, from the total increase, 11,500,000*l.* may be said to remain as the effect of gold upon the Australian trade in 1852 and 1853; the principal portion falling to the latter year. The proportions of the total increase to Australia are 86 per cent. for gold, and only 14 per cent. for an ordinary increase, instead of 48 and 52 per cent., as shown for the United States.

Since 1850, therefore, gold has probably augmented our exports to the United States by 14,500,000*l.*, and to Australia by 11,500,000*l.*, which, together, present a total of 26,000,000*l.* The estimated ordinary increase amounts to 15,717,319*l.* for the United States, and 1,865,314*l.* for Australia; the total of which is 17,582,633*l.*, a sum which may be favourably compared with the total attributed to gold. The total increase of our exports to the two gold-producing countries in the periods of from 1850 to 1853 for the United States, and from 1852 and 1853 for Australia, amounted to 43,466,839*l.*, of which it is estimated that 60 per cent. may be ascribed to the increased supply of gold, and 40 per cent. to the progressive development of our commerce under the influence of free trade.

From the present analysis of British exports, chiefly between the years of 1840 and 1853, we may draw the following conclusions:—

That the average increase during the period has been larger to foreign countries than to British possessions.

That our exports have averaged the proportions of about two-thirds to foreign countries and one-third to British possessions.

That with foreign countries, in different parts of the world, the order of increase has been to North America, South America, and Europe; and of Northern, Central, and Southern Europe, the rate of increase is highest in the southern division.

That with British possessions, the order of increase may be arranged to Australia, Cape of Good Hope, North American colonies, and the East Indies.

That to the United States and other corn growing countries, except Russia, our exports have increased with our imports of corn.

That our exports, for the space of nearly twenty years, prior to the introduction of free trade, remained without any progress, but, upon the change of policy, they began to increase, and advanced with each extension of free trade principles.

That as the increase in our exports, under free trade, continued up to the time of the recent discoveries of gold, it may be justly assumed that the advantages of free trade contributed, in conjunction with the impulse from gold, to the present extraordinary amount of our trade.

That more gold has created more trade, but that the increase of gold is not the sole source of the prosperity of our commerce.

The Census of the Deaf and Dumb in 1851. By DAVID BUXTON, Esq.,
Principal of the Liverpool School for the Deaf and Dumb.

[Read before the Statistical Section of the British Association for the Advancement of Science, at Liverpool, 23rd September, 1854.]

SINCE the instruction of the Deaf and Dumb has begun to attract general attention, and to receive, in some countries, the aid of governments, enumerations of this afflicted class of persons have been made in many of the countries of Europe, and also in connection with the three last national enumerations of the people in the United States of America.* The first time that any enquiry of the kind was attempted in this country, was at the census of 1851. "The plan adopted," and described in the report recently presented to parliament, "was the very simple one of including in the 'householder's schedule,' left at every house, a column in which was to be written 'blind,' or 'deaf and dumb,' against the name of any member of the family so afflicted."† The results of this enquiry have now been made public, and we are no longer dependent, for the "statistics of blindness and deaf muteness in this country," upon "estimates and conjectures, founded chiefly upon returns obtained in foreign states, or the limited experience of a few public institutions."‡

The report informs us, that, "owing to the difficulty of ascertaining the existence of dumbness in extreme infancy, the number of cases returned under that head must necessarily be slightly deficient;" but, it is "presumed that the returns . . . are on the whole tolerably complete."§ Now, if, from this cause, the actual number of young children who are deaf is understated,—of which there can be little doubt (it is even estimated that 1,241 would not be too many to add on this account ||),—it is, I think, equally certain that many aged persons are put down in these tables as "deaf and dumb," who are simply deaf from the infirmity of old age: the power of audition having failed like the other faculties, and become, in many cases, either greatly impaired, or totally extinguished, by the gradual decay of nature. It is evident, however, that these are not the persons whom we have in our minds when we speak of the "deaf and dumb." The census report itself distinguishes the two classes, in remarking that "the want of the sense of hearing in infants, or indeed, in children at any age under two years, by depriving them of the power of acquiring language,¶ necessarily causes partial or total dumbness. In later life," it is added, "when

* Dr. Peet, of New York. Statistics of the Deaf and Dumb, p. 7.

† Census of Great Britain, 1851. Population Tables, 11., vol. i., § 5. Report, p. 109.

‡ Ibid. p. 108.

§ Ibid. p. 109.

|| Ibid. p. 115.

¶ This is incorrect. The want of hearing does not occasion dumbness by "depriving" the sufferer "of the power of acquiring language," but by depriving him of the power of hearing spoken words, and, as a consequence, preventing his learning to imitate them. There is also a strange confusion of the terms "*language*" and "*speech*" in this passage.

speech has been acquired, deafness is attended with much less inconvenience.”* The former class only are the deaf and dumb *proper*; and it can but lead to error to confound the latter with them. Assuming, however, that the excess on this side of the account is counterbalanced by the omissions on the other, we may, upon the whole, take the given result as sufficiently correct for a general estimate, and for comparison with the returns of other countries, which have been prepared with precisely the same disadvantages, and are therefore subject to the same exceptions.

The commonness of errors in computations of this sort, is well known to those who are familiar with the subject. The population returns of the Grand Duchy of Baden, for instance, used to attract attention on account of the excessive proportion which they shewed of deaf mutes to the whole population; but it has now been ascertained that the idiotic and the deaf and dumb had been reckoned together.† In the United States also, though the experience of several state enumerations, as well as of the national census on three separate occasions, has been had, it is found that the deaf and dumb returns are still very far from being accurate; and I have personal information that a considerable number of paupers in the poor-houses of the city of Glasgow, were returned as “deaf and dumb,” who were merely deaf (or what is called “hard of hearing”), from old age. With these facts before us, we can hardly expect that our census returns should do more, at the best, than *approximate* to a true statement of the facts. One error probably goes to the balancing of another; and additional correctness must be looked for as the fruit of additional experience, in the prosecution of enquiries of such a special and peculiar character.

But the deaf and dumb have been included in two different branches of the enquiry connected with the census of 1851. The population tables purport to tell us their numbers, both locally and in the aggregate; and the education tables profess to shew the nature and extent of the provision which is made for their education. Concerning the former tables, there can be no question that they are most valuable, and likely to be of great utility; whereas the latter are so defective and fallacious, as to be worse than useless. There seemed a possibility, at first, that this might be the result of accident, or of omissions on the part of school authorities to supply the requisite information. But it is not so. You will find in the population returns, an account of every single school which is omitted

* Census of Great Britain, 1851. Note, p. 113.

† Thirty-fourth Report (1854) of the New York Institution for the Deaf and Dumb, p. 31. Strangely enough, an error of the same kind has been made in this country, as may be seen in the tables recently published. In vol. i., p. 325, we read that the sum of twenty-three deaf and dumb in the Colchester district is made up by the addition of “nineteen inmates of the Branch Asylum for Idiots, Essex Hall.” Of the parent Idiot Asylum, at Highgate, there is no account in any of the Reports of the Census, though it had been instituted four years before. The only school of the kind mentioned in the Education Returns is a small one at Bath, to which the Population Returns contain no allusion whatever. The Asylum for Idiots, founded in 1847, contained, in April, 1852, 141 pupils and patients, and the number has since increased to 200. The new Asylum, in course of erection, is to accommodate 400 inmates, and there are 200 applicants waiting for admission. (See Report for 1853.)

in the education tables : which proves that the information *was* furnished, and that it had not only been received but noted. We are, therefore, presented with this anomaly; the returns on education contain no adequate account of our schools, or of the number of pupils in them, but the population tables *do* : the inmates of educational institutions, excluded from the census of education, find a place for incidental mention in the foot-notes of the population tables, not, however, as school children under instruction, but merely as a portion of the population. Now it is a fact that, in this country, private liberality has raised, and is raising, annually, for the education of the deaf and dumb, a sum equal in amount to that which in France and the United States respectively, is granted from the public funds for the same purpose.* The donors, and, indeed, the whole community, are entitled to know, and in any public document of this kind they will naturally expect to find, that the results obtained are proportionate to the support afforded. But, consulted with this view, nothing can be more deceptive and useless than the education tables of the last census. I therefore think it a duty to the cause of deaf-mute instruction in this country, and to the various institutions in which it is carried on, that the present unequalled opportunity should be employed to vindicate our national reputation in this matter ; to shew that these tables do not accurately state either how much money is raised, or how many schools are supported, or how much work is done : that taken as evidence of what has been effected for the education of the deaf and dumb in Great Britain, since the first public institution was established for their benefit, in London, sixty-two years ago, these tables so greatly understate the case, as to do gross injustice to the noble spirit of beneficence which supports our schools, and to depose this country from the rank which it really holds among the other great nations of the world, in respect to the provision made for the education of the deaf and dumb. The education tables tell us, that in 1851, there were nine schools for the deaf and dumb in England (Table C, p. 95), and two in Scotland (Table C, p. 159); that all these eleven schools sent returns of their income for the year 1850, and that the income of the two Scottish schools from all sources (there being no endowment), was 1,405*l.*; while that of the nine English schools (three of which received, altogether, 114*l.* from endowment), was 9,403*l.* (Tables C, quoted above). Now, the amount of income thus put down for the whole of the English schools, was exceeded by that of a single institution, not included in the returns at all. Moreover, instead of 114*l.* being the whole sum derivable from endowments, the proceeds of invested funds and other property belonging to that one institution amounted, in the same year, to forty times that sum, being upwards of 4,500*l.* There is also a provision made for the deaf and dumb, in the city of Edinburgh, arising solely from endowment, of which you will find no

* The writer has shown this elsewhere. See a paper published in the "Transactions of the Historic Society of Lancashire and Cheshire," Liverpool, 1854, entitled "The Education of the Deaf and Dumb in Lancashire and Cheshire." The amount raised in England is 20,000*l.*, but in the whole of Great Britain about 24,000*l.* per annum. In France upwards of 600,000 francs are voted, and in the United States the sum is estimated at 120,000 dollars.

mention whatever in the education tables, though the population report will tell you that there were forty pupils there.

In order to shew that the education returns are not to be relied upon, as evidence of the position of deaf-mute instruction in this country, it is necessary that I should avail myself of other sources of intelligence, besides those which the census reports themselves furnish. Where the giving of information was optional, it may have been withheld. Therefore, while we look for an accurate statement of one class of facts, there is another class, the imperfectness of which may be readily accounted for, and of course excused. But this very imperfectness itself shews, what I have undertaken to prove, that as evidence of the state of deaf-mute instruction, these returns are of no value whatever.

Proceeding in the examination of the census report on education, published "by authority of the Registrar General," we find, from the dates given, that no existing school for the deaf and dumb was established in England; prior to 1821 (Table K, p. 105); whereas the London asylum was founded in 1792, and the Birmingham school in 1812. But these two institutions, though the oldest in England, are not mentioned in the returns at all; nor is the school at Exeter, nor a private one at Rugby, nor the institution at Glasgow, nor that at Aberdeen, nor that department for the deaf and dumb in Donaldson's Hospital, Edinburgh, which was just now alluded to. Yet every one of these, though excluded altogether from the education reports, must have made returns, and those returns must have been received, for each school is mentioned, and the number of pupils given, in the notes to the supplementary tables of the population returns. One school, mentioned by name in the education report, is omitted in the other: still, the excess of the deaf and dumb to the whole population in the town of Brighton (see vol. i., p. 136), shews that the inmates of the institution there must have been reckoned, though the customary special note is not added.

We will now endeavour, from the returns of the population, to supply the deficiencies of those on education. It will then be seen, from a comparison of the census tables themselves, how far below the truth is the statement which has gone forth to the world, as the official declaration on this important subject.

In Table O* (the classification of schools in their respective counties), *nine* institutions for the deaf and dumb are given; in Table P† (or the classification in towns), there are only *seven*; one of the two schools in Lancashire, and the one in Yorkshire, not being placed in the table for "boroughs and large towns." The nine schools enumerated, are the following:—

* pp. 110—124.

† pp. 125—136.

Table O.		Table P.		Number of Pupils.
Counties.		Boroughs.		
1	Gloucestershire	Bristol		30
2	Lancashire	1. Liverpool.....		56
3	Ditto	2. (Not named)		80
4	Middlesex	London		5
5	Northumberland	Newcastle		27
6	Somerset	Bath		47
7	Sussex	Brighton		38
8	Yorkshire. West Riding	(Not named)		87
9	South Wales	Swansea		22
		Total		392

The numbers given in the population returns differ from these in almost every case, being usually less. And it arises, I apprehend, from this circumstance: the education return would probably state the number of pupils upon the books; the other, being limited to those actually residing upon the spot on a given day, would exclude both day-scholars and absentees, while it would include such deaf and dumb adults as might be employed in the various institutions, either as teachers or servants. Thus, in the education census, the pupils of the Liverpool school are stated to be 56; but in the population tables, only 32 inmates are returned: the remainder, being day scholars, would be taken into the account at their own homes. The school which stands third in the foregoing table, is the one at Manchester, though it is nowhere so described, from the fact that it is situated in a different registration district. Our Transatlantic friends, to whom the ordinary local designations of our schools are so familiar, would be sorely puzzled to recognize under such denominations as "St. George, Southwark," "Barton-upon-Irwell," "King's Norton," and "St. Thomas," the localities of the London, Manchester, Birmingham, and Exeter schools. In that section of the census report which treats of the deaf and dumb, they may read the following passage:—"In London, a larger proportion is observed between 5 and 15 years of age, than elsewhere; a circumstance attributable to the institutions for the deaf and dumb established in the metropolis."* Thus speaks the one report. Turning to the other, we find the inconsistent and absurd statement, that there was just *one* such institution in the metropolis, containing five pupils!† Five pupils out of 1,325 deaf and dumb, in a population of 2,362,236! Again, we read, "throughout the country, a very small number, scarcely more than 1,100, were returned as inmates of schools or asylums."‡ But where are they? The report which especially refers to "schools and asylums," gives us, instead of 1,100, less than 500, as the number of pupils in all the institutions for the deaf and dumb, throughout England, Scotland, and Wales. The population tables enable us to add to the nine schools mentioned in the education report, the following:—

* Report, vol. i., p. 115.

† pp. 116, 136.

‡ p. 115.

Name of School.	Where Returned.	Number of Pupils.
London	St. George Southwark	301
Birmingham	King's Norton	65
Exeter	St. Thomas	39
Rugby	(Private)	19
To be added from former list.....		424
Total		392
		816

Thus we more than double the return which professes to give, officially and authoritatively, the status of deaf-mute instruction in England.

The same fallacious document states the schools in Scotland to be two, with 89 pupils. Again consulting the population returns, we find allusion to *five* separate establishments, containing nearly three times the number of pupils stated.

	County.	Town.	Number of Inmates.
1	Lanarkshire.....	Glasgow	87
2	Edinburghshire	1. Edinburgh	68
3	Ditto	2. Donaldson's Hospital.....	40
4	Forfarshire	Dundee	24
5	Aberdeenshire	Aberdeen	31
Total			250

Seeing then, that from the returns before us, we can prove that our English institutions were not 9, with 392 pupils, but 13, with 816; and that the Scottish institutions, instead of being two in number, with 89 inmates, were 5, and contained 250; the number of schools thus omitted being 7, and of pupils no less than 585, or 55 per cent., we hold ourselves justified in declining to be judged by the evidence tendered in the education report, and in doing our utmost to discredit and to correct its injurious testimony.

The latest and most authentic table which has been prepared, shews that at the commencement of the present year, the schools in the United Kingdom contained 1,401 pupils, viz. :—

England and Wales.....	854
Scotland	259
Ireland.....	288

Total..... 1,401*

Since the dates of their establishment, the British institutions have received nearly 7,000 pupils: in the following proportions :—

* See Report of the Glasgow Institution for 1854, p. 7.

Name of Institution.	Established.	Number Admitted.
London	1792	2,544
Birmingham	1812	380
Manchester	1823	413
Liverpool	1825	310
Exeter	1827	212
Yorkshire (Doncaster)	1829	430
Newcastle	1839	105
Brighton	1841	119
Bristol	1841	78
Bath	1842	60
Cambrian (Swansea)	1847	40
Total for England and Wales		4,691
In the Irish Schools, there were or had been under instruction, } when the Census Report was prepared, See <i>Status of</i> } <i>Disease</i> , &c., Table xiii., p. 34		1,081
The Scottish Schools, having been longer in existence, may } safely be put down at the same number, or		1,100
Total for Great Britain and Ireland		6,872

The total number of the deaf and dumb returned in the various enumerations for the United Kingdom, is—

	Number of Deaf and Dumb.	Population.	Proportion.
England.....	9,543	16,738,695	1 : 1,754
Ireland	4,747	6,552,324	1 : 1,380
Scotland.....	2,155	2,888,742	1 : 1,340
Wales.....	771	1,188,914	1 : 1,542
Islands in the British } Seas	84	143,126	1 : 1,704
	17,300	27,511,801	1 : 1,590

This result of 1 in 1590, for all the British population, is most remarkable, on account of its close approximation to the average for the whole of Europe, which according to the latest returns is stated to be 1 in 1,593.*

As to the local prevalence of deafness, the proportion varies greatly in different counties. The following list exhibits the extremes of this diversity :—

In Herefordshire	there is 1 person deaf and dumb in every 1,054 inhabitants
„ Worcestershire	„ 1 „ „ 1,160 „
„ Derbyshire	„ 1 „ „ 1,272 „
„ Cornwall	„ 1 „ „ 1,278 „
„ Lancashire	„ 1 „ „ 2,045 „
„ E. R. of Yorkshire	„ 1 „ „ 2,231 „
„ Monmouthshire	„ 1 „ „ 2,300 „
„ Kent (ex.-Metrop.)	„ 1 „ „ 2,343 „
„ Durham	„ 1 „ „ 2,480 „
„ Huntingdonshire	„ 1 „ „ 3,016 „

* Census Report on Population, vol. i., p. 113.

Thus for 1 deaf and dumb in Lancashire	there are 2 in Herefordshire.
„ 1 „ Huntingdonshire	„ 3 in Herefordshire.
„ 1 „ E. R. Yorkshire	„ 2 in Worcestershire.
„ 1 „ Durham	„ { 2 in Derbyshire and 2 in Cornwall.

In the general table, wherein the counties are grouped into districts, these results appear somewhat modified. The highest averages appear, 1, in the northern counties of Scotland; 2, in the south-western division of England, which comprises Wilts, Dorset, Devon, Cornwall, and Somerset; and 3, in the southern counties of Scotland: and the lowest averages in the kingdom are found in the north-western division of England (Lancashire and Cheshire), and in the northern counties, Durham, Northumberland, Cumberland, and Westmoreland. The following table, from the census report, gives the full statement:—

Table 51.	Population.	Number of Deaf and Dumb.	Proportion to Population.
Great Britain and Islands in the British Seas	20,959,477	12,553	One in 1,670
England and Wales	17,927,609	10,314	1,738
Scotland	2,888,742	2,155	1,340
Islands in the British Seas.....	143,126	84	1,704
<i>England and Wales.</i>			
I. London	2,362,236	1,325	1,783
II. South Eastern—ex.-Metrop., Surrey, and Kent; Sussex, Hants, Berks.....	1,628,386	836	1,948
III. South Midland—ex.-Metrop., Middlesex, Herts, Bucks, Oxon, Northamptonshire, Hunts, Beds, Cambridgeshire	1,234,332	649	1,902
IV. Eastern—Essex, Suffolk, Norfolk	1,113,982	669	1,665
V. South Western—Wilts, Dorset, Devon, Cornwall, Somerset	1,803,291	1,295	1,393
VI. West Midland—Gloucestershire, Herefordshire, Salop, Staffordshire, Worcestershire, Warwickshire	2,132,930	1,325	1,610
VII. North Midland—Leicestershire, Rutlandshire, Lincolnshire, Nottinghamshire, Derbyshire	1,214,538	694	1,750
VIII. North Western—Cheshire, Lancashire	2,490,827	1,237	2,014
IX. Yorkshire	1,789,047	1,042	1,717
X. Northern—Durham, Northumberland, Cumberland, Westmoreland	969,126	471	2,058
XI. Welsh—N.W., S.W., Monmouthshire	1,188,914	771	1,542
<i>Scotland.</i>			
Southern Counties	1,813,562	1,225	1,480
Northern Counties	1,075,180	930	1,156

In the four provinces of Ireland, the following is found to be the proportions:—

Leinster.....	1 deaf and dumb in	1,474
Connaught	1 „	1,499
Ulster	1 „	1,318
Munster	1 „	1,317

The returns for counties shew a greater disparity:—

In Roscommon, Westmeath, Dublin, and Kildare, the average is....	1 : 1,935
„ Mayo, Limerick, Donegal, Waterford, Wicklow, Tipperary, Tyrone, and Fermanagh	} 1 : 1,068
„ Wicklow alone it amounts to.....	
	1 : 1,031

These statistics of the deaf and dumb in Ireland are taken from the supplementary report on the Irish census, which has lately been presented to parliament, under the title of the “*Status of Disease*,” pp. 8—10. That part of the volume which refers to the deaf and dumb, forms one of the most valuable documents which has ever been published in this country upon the subject. For the facts to which I am now about to refer, I am indebted to the recent reports of the New York institution for the deaf and dumb, and to other publications of its president and principal, Dr. Peet, with which that gentleman has kindly furnished me.

For the United States, we gather from the census tables of 1850, the following returns:—

	Whole Population.	Deaf and Dumb.	Proportion.
White population	19,557,271	9,085	1 : 2,152
Coloured	3,633,803	632	1 : 5,750

In the state of New York, there were returned 1,253 deaf and dumb in 3,097,384, or 1 in 2,473: but a comparison of the various counties composing the state, shews that the averages range from 1 in 1,100, 1,200, and 1,300, to 1 in 4,500, 4,800, and 5,000.

In the North Eastern Counties the proportion is 1 in 1,799*

„ South Eastern „	1 „ 2,880
„ City of New York itself „	1 „ 3,996

Extending our view to the whole of the states in the Union, we find that in the

Southern States	the proportion is 1 in 2,020
Northern „	1 „ 2,060
Extreme Western (Texas and New Mexico) „	1 „ 2,800

California, Utah, Oregon, and Minnesota, are also returned, but in such a form as shews how unreasonable it is to expect from countries so recently settled, and characterized by such peculiar social conditions, any satisfactory data on such a subject. Out of a population of 32,276, only 6 deaf-mutes are returned. The very act of including such returns with the rest, only deranges and falsifies the conclusions which might be fairly drawn from facts which are better ascertained, and more trustworthy. As a general result, we have,

For all the Atlantic States	1 deaf and dumb in 1,961
„ Western States and Territories 1 „	2,245

* This result agrees exactly with that for the white population of the six New England States, where 1,504 are deaf and dumb out of 2,705,772 = 1 in 1,799.

and a general average for the whole of the United States (but of the white population only, for that alone can be relied upon), of 1 deaf and dumb in every 2,152 persons.

In France (according to an official census of the population, published by the Minister of the Interior, by a decree of May 10th, 1852), there are 29,512 deaf-mutes. This, in a population of 35,783,170, gives 1 deaf and dumb in 1,212. The only other European country, concerning which we have official accounts sufficiently recent to be classed with those already reviewed, is Prussia. There, in 1849, in a population of 16,331,187, there were 11,973 deaf and dumb, = 1 in 1,364.

The variations in the proportion which the different departments of France exhibit, are very striking. According to a Table dated January 1, 1853, and published at Paris, in a monthly periodical on subjects connected with the deaf and dumb and the blind,* the proportions vary from 1 in 686 and 1 in 691 in Corsica and the Upper Rhine, to 1 in 2,515 in the department of the Lower Seine.

In	2 departments the proportion exceeds 1 in	700
„ 4	„ „	1 „ 800
„ 6	„ „	1 „ 900
„ 8	„ „	1 „ 1,000
„ 6	„ „	1 „ 1,100
„ 11	„ „	1 „ 1,200
„ 10	„ „	1 „ 1,300
„ 10	„ „	1 „ 1,400
„ 9	„ „	1 „ 1,500
„ 12	„ „	1 „ 1,600
„ 3	„ „	1 „ 1,700
„ 2	„ „	1 „ 1,800

The three highest are, the Tarn = 1 : 2,123, the Seine = 1 : 2,481, and the Lower Seine = 1 : 2,515.

The census tables of 1851 furnish us with the *ages* of the deaf and dumb in this country; which, however, I shall only glance at here, with a view to ascertain how far those which are of the ordinary school age are under instruction.

Of both sexes, there were in the various districts into which England was divided, the following numbers:—

District.	Aged 5—10.	Aged 10—15.	Total 5—15.
London	227	327	554
South Eastern.....	136	119	255
South Midland	110	63	173
Eastern	114	79	193
South Western	209	187	396
West Midland.....	209	210	419
North Midland	119	69	188
North Western	188	205	393
Yorkshire	172	168	340
Northern	78	54	132
Wales	110	124	234
	1,672	1,605	3,277

* Le Bienfaiteur des Sourds-muets et des Aveugles. Paris, Juillet, 1853. No. 1, p. 24.

The age of admission into our English institutions, and other circumstances, result in this, that practically, the pupils may be considered to be between the ages of 9 and 14 years. The table just given affords an average of 327 children per year, between the ages of 5 and 15 years. For five of those years (say 9-14), this would make the number 1,635. We have already seen that the number under instruction in 1851, was 816; exactly one-half of what, upon this calculation, it should have been. In Scotland, there were, at the same time, between 5 and 10 years old, 315 deaf and dumb children: and between 10 and 15 years, 395, making 710 altogether. By the same reckoning, this gives 355 for the usual five years at school: the actual number being 250, or five-sevenths of the whole. In Ireland, the following results appeared:—

Provinces.	Aged 5—10.	Aged 10—15.	Total 5—15.
Leinster	168	158	326
Munster	222	190	412
Ulster	194	221	415
Connaught	88	116	204
	672	685	1,357

Five times the yearly average would here give us 678 children, who ought to have been at school: whereas the number was but 234, or one-third of the eligible number.

It results, therefore, that of the deaf and dumb children computed to be of the ages of 9-14, there were only the following proportions actually at school:—

Ireland.....	234	out of	678	=	34½	per cent.
England and Wales....	816	„	1,635	=	50	„
Scotland	250	„	355	=	70	„

Comparing the children who are known to be under instruction, with the whole of the deaf-mute population, we have

In Ireland.....	234	:	4,747	=	5	per cent.
„ France	1,642	:	29,512	=	5½	per cent.
„ England and Wales....	816	:	9,543	=	nearly 8	per cent.*
„ Scotland	250	:	2,155	=	more than 11½	per cent.
„ United States	1,162	:	9,717	=	nearly 12	per cent.

If it be thought that these are small results, it should be remembered, not only what is being done, but what has been done, and that the whole has been accomplished within the last century. There are now, in different parts of the world—*i. e.* in Europe and North America, 200 schools for the deaf and dumb. A century ago, there was not one. Nearly 7,000 persons have received education in the schools of Great Britain since 1792; and nearly 5,000 in

* As the 816 pupils in England and Wales are equal both to 8 per cent. of the whole deaf and dumb population, and to 50 per cent. of those who should be at school, it follows that 16 per cent. of the population is the number which should be under instruction. Formerly, before census returns were available, this number used to be estimated at one-sixth, which is as near to 16 per cent. as possible. Thus, by both computations we arrive at the same result.

those of the United States since 1817. How many more in the continental schools, all within the century, I have no means of ascertaining. But these, instead of being insignificant, are, indeed, marvellous results, when we remember the point of starting. It was in 1754, that De l'Epée was first brought, by the merest accident as it seemed, into contact with two sufferers under that calamity, the sad consequences of which he thenceforward devoted himself to alleviate. In the same year, a beginning was made by Samuel Heinicke, with a single pupil, in Dresden. In 1760, with one pupil also, Thomas Braidwood opened a school, at Edinburgh, in a place which received the name of *Dumbiedikes*, a designation which the author of Waverley has made immortal.*

And from these beginnings have sprung all the schools which are now to be found in almost every considerable city in the world. When, therefore, the admiration of posterity is challenged for the great social improvements which have been made during the last centennial period, let not this be forgotten. When, for example, the historian points, as the works of this age, to the illumination of our thoroughfares and buildings,—the navigation of our streams,—the spanning of the vastest oceans of the earth by the agency of steam,—the practical contiguity of remote places, which has been brought about by the discoveries of Watt, and Fulton, and Stephenson,—the subjugation of the subtlest principle in nature, for the transmission of thought, and the transaction of daily affairs;—when he shall pronounce his deserved panegyric upon the monuments of human genius which surround us,—upon the mighty achievements of well-directed skill and industry,—the vast development of natural resources, and the wonderful augmentation of the means of human happiness, which have thence arisen,—let him remember that all this would have been entirely lost upon one numerous class in the community, if it had not been accompanied by that application of a previous discovery, which has made the education of the deaf and dumb a thing not only possible, but actual; taking it for ever out of the barren field of speculation and theory, and founding upon it one of the ordinary and permanent institutions of society.

If, from the local associations which are so strong upon us at present, I might draw an augury for the future, I would say, that as “the glory of this latter house,” in which we are assembled,† and which has been inaugurated in the centenary year of deaf and dumb institutions, exceeds that of the other public edifice,‡ which was opened with so much hope and rejoicing a hundred years ago, and as this magnificent structure aptly symbolizes the material greatness and rapid development of this community, so would I anticipate that the century now opening may equally surpass the epoch just closed, in its important and beneficial bearings upon the condition of the deaf and dumb, not only of our own nation, but of every country upon earth.

* See “Heart of Mid Lothian.” Note E.

† St. George’s Hall, Liverpool, opened September, 1854.

‡ The Town Hall of Liverpool opened A.D. 1754.

MISCELLANEA.

PROCEEDINGS OF THE STATISTICAL SOCIETY.

*Eighth Ordinary Meeting.—Session 1853-54.**Monday, the 19th of June, 1854.*

The Right Hon. Holt Mackenzie, V.P., in the Chair.

The following Papers were read :—

1. "Our Commerce with Russia in Peace and in War." By John Towne Danson, Esq., Barrister-at-Law.
2. "On a Decimal Coinage for the United Kingdom." By Frederick James Minasi, Esq.
3. "Historical and Statistical View of the Colony of Victoria." By Gavin Mason Bell, Esq.
4. "Statistics of the United States of America." By Thomas Abercrombie Welton, Esq.

*First Ordinary Meeting.—Session 1854-55.**Monday, the 20th of November, 1854.*

The Right Hon. Holt Mackenzie, V.P., in the Chair.

Mr. Newmarch gave a Résumé of the Proceedings of the Statistical Section of the British Association at its recent Meeting at Liverpool.

The following Paper was read :—

"On the Influence of Social Degradation in producing Pauperism and Crime, as exemplified in the Free Coloured Citizens and Foreigners in the United States." By the Rev. Robert Everest.

*Second Ordinary Meeting.—Session 1854-55.**Monday, the 18th of December, 1854.*

The Right Hon. Holt Mackenzie, V.P., in the Chair.

The following Candidates were elected Fellows of the Society :—

Right Hon. Lord Wharncliffe

Gavin Mason Bell, Esq.

Swinton Boulton, Esq.

John Norman Crosse, Esq.

John Hutchison, Esq.

Lieut.-Col. J. H. Macdonald.

Alfred Neild, Esq.

Richard James Spiers, Esq.

The following Paper was read :—

"On the Statistical Position of Religious Bodies in England and Wales." By Horace Mann, Esq., Barrister-at-Law.

*Third Ordinary Meeting.—Session 1854-55.**Monday, the 15th of January, 1855.*

Colonel Sykes, F.R.S., in the Chair.

The Right Honourable Lord Stanley, M.P., was elected a Fellow of the Society.

The following Paper was read :—

"On the effect of the Recent Orders in Council in relation to British, Russian, and Neutral Commerce." By Alfred Waddilove, Esq., D.C.L.

**THE MARRIAGES, BIRTHS, AND DEATHS,
REGISTERED IN THE DIVISIONS, COUNTIES, AND DISTRICTS OF ENGLAND.**

The Marriages for the Quarter ended September, 1854, and the Births and Deaths for the Quarter ended December, 1854,

AS PUBLISHED BY AUTHORITY OF THE REGISTRAR-GENERAL.

This return comprises the births and deaths registered by 2,196 registrars in all the districts of England during the Autumn quarter that ended on December 31st, 1854; and the marriages in 12,093 churches or chapels, about 3,569 registered places of worship unconnected with the Established Church, and 627 superintendent registrars' offices, in the quarter that ended on September 30th, 1854.

The general aspect of the returns is unfavourable. The marriages, though above the average, were proportionally fewer than the numbers in the corresponding seasons of the four previous years. The births are below, the deaths above the average. Cholera, which prevailed epidemically in the summer, when it subsided left the population unhealthy; and while the country suffered, the towns have experienced an unusually high rate of mortality.

MARRIAGES.—38,150 marriages were celebrated in the three months that ended on September 30th, 1854; or 76,300 persons were married; which is at the annual rate of 812 marriages to every 100,000 persons in the population. The average of the quarter for the preceding ten years was 804. The marriages declined in every division except the Northern, and in Wales and Monmouthshire: in Lancashire and the West Riding of Yorkshire the decrease was considerable.

BIRTHS.—146,459 births were registered in the quarter that ended on December 31st; and the number slightly exceeds the numbers in the corresponding quarter of 1853; but the rate is less than the average in the proportion of 3.111 to 3.143 births per cent. per annum on the population.

The births that were registered during the year 1854 amount to 634,506, and

Marriages, Births, and Deaths, returned in the Years 1842-54 and in the Quarters of those Years.

YEARS.....	1842	1843	1844	1845	1846	1847	1848	1849	1850	1851*	1852	1853	1854
Marriages	118835	123818	132249	143743	145664	135845	138230	141883	152744	154206	158439	164021	...
Births	517739	527325	540763	543521	572625	539965	563059	578159	593432	615865	624171	612341	634506
Deaths	349519	346445	356933	349366	390315	423304	399533	440839	368995	395174	407826	421775	438239
MARRIAGES.													
Quarters ended the last day of													
March	25860	25265	26387	29551	31417	27480	28398	28429	30567	32724	32933	35014	33141
June	30048	31113	34268	35300	37111	35197	34721	35844	39204	38635	40007	40335	40359
September	27288	28847	31675	35003	35070	32439	32995	33874	37636	37316	38291	39786	38150
December	35629	38573	39919	43889	42066	40729	42116	43736	45337	45531	47268	48886	...
BIRTHS.													
March	155615	136837	143578	143080	145108	146453	139736	153772	144551	157286	161776	161598	166892
June	134096	131279	136941	136853	149450	139072	149760	153693	155865	159073	159186	158718	172420
September	123296	128161	130078	132369	138718	127173	140359	135223	146911	150594	151193	147581	154785
December	124732	131045	130166	131219	139349	127267	133204	135471	146095	148912	152066	144444	146439
DEATHS.													
March	96314	91926	101024	101664	89484	119672	120032	105570	98430	105306	106682	118241	111970
June	86538	87234	85337	89149	90231	106718	99727	102153	92871	99468	100813	107861	102766
September	82339	76792	79708	74872	101663	95435	87638	135227	85849	91381	100385	92332	115959
December	84328	87493	90864	80681	108937	103479	92436	97559	91845	99019	99946	106341	109664

* The numbers up to 1851 have appeared in the Annual Reports.

exceed by 22,165 the births during the year 1853. The rate of births was 3·408 per cent., which exceeds the average by 0·095, but is less than the rate of 1851 and 1852.

INCREASE OF POPULATION.—The births in the quarter exceed the deaths, and leave a balance of 36,795 in the population; but, after subtracting 20,762* English emigrants, 15,988 remain in excess, to which, however, a certain proportion of Irish and Scottish immigrants into England must be added. 52,576 emigrants left the ports of the United Kingdom at which there are Government Emigration Officers, including 17,309 English, 3,502 Scotch, 21,090 Irish, 1,930 foreigners, 8,745 not distinguished. Of the number returned as English, 13,568 were bound for Australia, 67 for the North American colonies, 3,674 for the United States.†

THE PRICES OF PROVISIONS, AND THE WEATHER.—The cost of living affects the births, deaths, and marriages; and how this has varied in the last two years is indicated in the annexed table. The average price of wheat during the quarter that ended on December 31st, 1854, has been 68s., while in the corresponding quarters it was 40s. 5d. in 1852, and 69s. 10d. in 1853. The price of wheat in two years rose 68 per cent., beef 44 per cent., mutton 14 per cent. Potatoes are fortunately cheaper than they were in 1852, and only two-thirds of the price that ruled at the end of 1853. The weather is ably described by Mr. Glaisher, p. 193.

England :—Annual Rate per cent. of Marriage, Birth, and Death, during the Years 1844-54, and the Quarters of those Years.*

Estimated Population of England in thousands in the middle of each Year.....	16520	16721	16925	17132	17340	17552	17766	17983	18205	18402	...	18617
YEARS	1844	1845	1846	1847	1848	1849	1850	1851	1852	1853	Mean, 1844-53	1854
Marriages.....	·801	·860	·861	·793	·797	·808	·860	·858	·870	·891	·840	...
Births.....	3·273	3·251	3·383	3·152	3·247	3·294	3·340	3·425	3·428	3·328	3·313	3·408
Deaths.....	2·161	2·089	2·306	2·471	2·306	2·512	2·077	2·198	2·241	2·292	2·266	2·354
MARRIAGES.												
Quarters ended the last day of												
March.....	·644	·721	·757	·655	·661	·661	·702	·742	·729	·775	·705	·726
June.....	·834	·849	·882	·826	·805	·822	·888	·864	·883	·880	·853	·872
September.....	·760	·830	·822	·751	·755	·766	·840	·822	·833	·856	·804	·812
December.....	·955	1·038	·983	·940	·961	·986	1·010	1·000	1·024	1·050	·995	...
BIRTHS.												
March.....	3·507	3·491	3·498	3·488	3·252	3·575	3·321	3·567	3·581	3·575	3·486	3·523
June.....	3·334	3·291	3·551	3·263	3·474	3·523	3·530	3·557	3·512	3·464	3·450	3·722
September.....	3·123	3·140	3·251	2·945	3·211	3·056	3·281	3·317	3·290	3·177	3·179	3·294
December.....	3·115	3·103	3·256	2·938	3·038	3·053	3·253	3·270	3·300	3·101	3·143	3·111
DEATHS.												
March.....	2·467	2·554	2·157	2·850	2·794	2·162	2·261	2·388	2·362	2·616	2·491	2·452
June.....	2·077	2·144	2·144	2·506	2·313	2·311	2·107	2·224	2·225	2·354	2·244	2·216
September.....	1·913	1·776	2·382	2·163	2·005	3·037	1·917	2·013	2·185	1·988	2·140	2·425
December.....	2·175	1·908	2·545	2·389	2·108	2·199	2·045	2·174	2·169	2·219	2·193	2·330

* The table may be read thus, without reference to the decimal points:—In the year 1848, to 100,000 of the population of England there were 797 marriages, 3,247 births, and 2,306 deaths registered. The annual rates of marriage in each of the four quarters were 661, 805, 755, and 961 per cent.; the rates of death 2·794, 2·313, 2·005, and 2·108 per cent. In reading the population on the first line add three ciphers (000). The three months January, February, March, contain 90, in leap year 91 days; the three months April, May, June, 91 days; each of the two last quarters of the year 92 days. For this inequality a correction has been made in the calculation.

* This number includes 3,453 of the 8,745 whose birth-places were not distinguished.

† From a Return with which the Registrar-General has been favoured by the Emigration Commissioners.

STATE OF THE PUBLIC HEALTH.—The deaths in the three months October, November, and December amounted to 109,664; and the annual rate of mortality in the quarter was 2·330 per cent., which is ·137 above the average. The deaths in the year were 438,239; and the annual rate of mortality was 2·354 per cent., or ·088 above the average.

The mortality in the country districts during the year was 1·888 per cent. in 1850, and 2·026 in 1854. The mortality of the town districts, which was 2·288 in 1850, regularly increased, and was 2·816 in 1854. The epidemic cholera was much

The Average Prices of Consols, of Wheat, Meat, and Potatoes, also the Average Quantity of Wheat sold and imported Weekly, in each of the nine Quarters ended December 31st, 1854.

Quarters ended	Average Price of Consols (for Money.)	Average Price of Wheat per Quarter in England and Wales.	Wheat sold in the 290 Cities and Towns in England and Wales making Returns.	Wheat and Wheat Flour entered for Home Consumption at Chief Ports of Great Britain.	Average Prices of Meat per lb. at Leadenhall and Newgate Markets (by the Carcase).		Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.
			Average Number of Quarters weekly.		Beef.	Mutton.	
1852	£						
Dec. 31.	100 $\frac{3}{8}$	40s. 5d.	111,224	72,870	3d.—5d. Mean 4d.	4 $\frac{1}{4}$ d.—6 $\frac{1}{4}$ d. Mean 5 $\frac{1}{4}$ d.	90s.—120s. Mean 105s.
1853							
Mar. 31.	99 $\frac{5}{8}$	45s. 7d.	95,115	63,530	3 $\frac{3}{4}$ d.—5 $\frac{1}{4}$ d. Mean 4 $\frac{1}{2}$ d.	4 $\frac{3}{4}$ d.—6 $\frac{3}{4}$ d. Mean 5 $\frac{3}{4}$ d.	110s.—145s. Mean 127s. 6d.
June 30.	100 $\frac{1}{8}$	44s. 6d.	84,559	82,623	4d.—5 $\frac{3}{4}$ d. Mean 4 $\frac{7}{8}$ d.	5d.—6 $\frac{3}{4}$ d. Mean 5 $\frac{7}{8}$ d.	110s.—145s. Mean 127s. 6d.
Sept. 30.	97	51s. 10d.	86,087	120,020	4 $\frac{1}{2}$ d.—6d. Mean 5 $\frac{1}{2}$ d.	5d.—7 $\frac{1}{4}$ d. Mean 6 $\frac{1}{8}$ d.	110s.—125s. Mean 117s. 6d.
Dec. 31.	93 $\frac{6}{8}$	69s. 10d.	79,002	91,627	4d.—6d. Mean 5d.	4 $\frac{1}{2}$ d.—7d. Mean 5 $\frac{7}{8}$ d.	135s.—165s. Mean 150s.
1854							
Mar. 31.	91	79s. 6d.	60,022	103,519	4 $\frac{1}{4}$ d.—6 $\frac{1}{4}$ d. Mean 5 $\frac{1}{4}$ d.	4 $\frac{1}{2}$ d.—7d. Mean 5 $\frac{3}{4}$ d.	120s.—160s. Mean 140s.
June 30.	88 $\frac{5}{8}$	78s. 4d.	55,842	103,331	4 $\frac{1}{2}$ d.—6 $\frac{1}{4}$ d. Mean 5 $\frac{3}{8}$ d.	4 $\frac{3}{4}$ d.—6 $\frac{3}{4}$ d. Mean 5 $\frac{5}{8}$ d.	137s.—172s. Mean 155s.
Sept. 30.	93 $\frac{7}{8}$	63s. 10d.	56,389	48,135	4 $\frac{3}{4}$ d.—6 $\frac{3}{4}$ d. Mean 5 $\frac{3}{4}$ d.	5d.—7d. Mean 6d.	Regents. 75s.—85s. Mean 80s.
Dec. 30.	93 $\frac{6}{8}$	68s. 0d.	128,783	19,513	4 $\frac{1}{2}$ d.—6 $\frac{3}{4}$ d. Mean 5 $\frac{5}{8}$ d.	5d.—7d. Mean 6d.	95s.—105s. Mean 100s.
Col.	1	2	3	4	5	6	7

Note.—The total number of quarters of wheat sold in England and Wales for the 13 weeks ended December 31st, 1852, 1,445,906; for the 13 weeks ended March 31st, 1853, 1,236,493; for the 13 weeks ended June 30th, 1853, 1,099,261; for the 13 weeks ended September 30th, 1853, 1,119,128; for the 14 weeks ended December 31st, 1853, 1,106,027; for the 13 weeks ended March 31st, 1854, 780,282; for the 13 weeks ended June 30th, 1854, 725,946; for the 13 weeks ended September 30th, 1854, 733,059; and for the 13 weeks ended December 31st, 1854, 1,674,173. The total number of quarters entered for Home Consumption was, respectively, 947,310; 825,886; 1,074,095; 1,560,255; 1,191,149; 1,345,743; 1,343,305; 625,755; and 253,669.

Columns 2, 3, and 4 are compiled from the official returns published in the London Gazette; columns 1, 5, 6, and 7 are derived from the London market returns published in the Economist.

more fatal in the towns in July, August, and September, 1849, than in the same months of 1854; but, upon the other hand, the towns in October, November, and December, 1854, experienced a higher mortality than that of the corresponding months in 1849. Never, therefore, was the demand for real sanatory measures more urgent; as eight millions of the population of the country are living in towns of some magnitude; and the health and vigour of the children and parents must undergo constant deterioration from the want of pure water, drainage, cleanliness, house accommodation, and a well-considered medical and sanatory organization.

Under the Registration Act the deaths of all classes of the population in England are registered, and the deaths that escape are quite insignificant in number, so that virtually the families of all the people at home have the advantages of registration. A provision also is made for the registration of all deaths at sea, of which information can be formally supplied by the captains and commanders; but the sea returns have not hitherto come in with any degree of regularity. For the year 1854 the returns of the deaths of only 193 persons at sea have been received, including 123 seamen in the Royal Navy, belonging chiefly to the Baltic fleet. No returns of the deaths of seamen in the Black Sea have yet arrived.

The Act has made no provision for the registration of the officers and soldiers of the army who die out of England; so that while the name, age, rank, or profession, place, time, and cause of the death of every man, woman, or child, that dies at home, are preserved in the registers, the names of the men who uphold in arms the cause and the fame of their country abroad find no place in these records. Otherwise every family that has sent forth its sons, and has lost them in the war, would have the satisfaction of knowing that their names were inscribed in a perpetual record, whether they died at Varna, perished in Scutari, sank under the waves of the inhospitable sea, or slumber at Alma, Balaklava, and Inkermann, under the earth of the Crimea, consecrated only by their bravery.

Deaths in the Autumn Quarters.

	1844	1845	1846	1847	1848	1849	1850	1851	1852	1853	Total 1844-53	1854
In 117 Districts, comprising the chief towns...	44080	39293	53055	57925	46124	47685	45245	49282	49507	54702	486398	56240
In 508 Districts, comprising chiefly small towns and country parishes	46784	41388	55882	45554	46312	49904	46600	49737	50439	48639	481239	53424
Total.....	90864	80681	108937	103479	92436	97589	91845	99019	99946	103341	968137	109664

Population, Deaths, and Mortality per cent. in the Autumn Quarters, 1844-54.

	Population Enumerated.		Deaths in 10 Autumn Quarters, 1844-53.	Annual Rate of Mortality of 10 Autumn Quarters, 1844-53.	Annual Rate of Mortality in the Autumn Quarter 1854.
	June 6-7th, 1844.	March 31st, 1851.			
In 117 Districts, comprising the chief towns	6,612,958	7,886,473	486,898	2.548	2.777
In 508 Districts, comprising chiefly small towns and country parishes	9,301,190	10,041,136	481,239	1.943	2.020
All England	15,914,148	17,927,609	968,137	2.193	2.330

It would be useful in other respects to have authentic official returns of the deaths, and the causes of death, in the army as well as in the civil population; for it would, at the same time, dissipate the exaggeration that always attends great losses, and enable the public to see precisely, by the diseases and the mortality, the sanitary condition of the army under different circumstances.

The army at the census of 1851* consisted of 142,870 officers and men, of whom 66,424 were stationed in the United Kingdom, 2,948 on passage out or home, and 73,498 abroad in the colonies and in the East Indies. The annual mortality of men in civil life at home of the corresponding ages is at the rate of 9 in 1,000, but the mortality of the troops at home probably exceeds 15 per 1,000; and the mortality of the troops abroad, and chiefly in the tropical climates, is such that the mortality of the whole army is said to be at the rate of 30 in 1,000 in time of peace. At these rates 3,290 officers and soldiers die abroad annually, of whom about 2,193 belong to England, whose names, whatever their connection with property may be, never appear on the English registers. In the time of war the deaths in the army abroad are raised in two ways, by the augmentation of the forces, and the increased rate of mortality from wounds and from the diseases that have hitherto been incidental to warfare in the field. Thus the mean strength of the British force, officers and men, in the Peninsula, was 66,372; the deaths during the 41 months that ended May 25th, 1814, were 35,525, of which only 9,948 happened in battle or as the consequences of wounds. 225 per 1,000 of the 61,511 men were, on an average, upon the sick list, and their annual mortality was at the rate of 161 per 1,000.*

To the ordinary deaths of officers and soldiers abroad in 1854 must be added the excess of deaths in the war, which have been caused partly by the extension of the same epidemic of cholera that has prevailed in England, and partly by diarrhœa, dysentery, and other diseases that, like cholera, are made fatal by lying on the ground, by the use of impure water, by dirt and damp, by privation, and by the substitution of salt pork, rum, and biscuits, for the fresh meat, vegetables, bread, fruit, ale, stout, or wine, that officers and men, like the rest of the people, live on at home.

61,000 of the deaths in England during the year 1854 are referable to the imperfect operation of the sanitary organization of our towns.† And the same cause, exaggerated certainly, with the absence of the comforts and necessities that are supplied at home, has led to the deplorable destruction of life in the Crimea.

The deaths in an average year among 54,000 men in the town and country population of England, at the same ages as the men in the army, is 486, or nearly 41 monthly; and about 972 are constantly sick. All the deaths and sickness in excess of these numbers, except the deaths and wounds from battle, are, like the excess of deaths and sickness in our towns, referable to conditions that, in the present state of engineering, chemical, and medical science, may be removed to a considerable extent in ordinary climates, even in the field and in the presence of an enemy; for the art of preserving life has, since the Peninsular campaigns, made as much progress as the manufacture of arms; and if skilfully applied, our army will never again endure the mortality from disease that so much impaired its efficiency once in the Peninsula, and again, after the lapse of more than forty years, in the Crimea.

In London the epidemic of cholera subsided, after having been fatal, in 13 weeks, to 982 persons. Diarrhœa was the cause of 543 deaths. The cholera was fatal to 728 persons, and diarrhœa to 565 persons, in the corresponding week of 1853, when the epidemic had recently commenced its ravages. Small-pox was fatal in 289 instances, measles in 369, whooping-cough in 419, typhus in 712; but scarlatina has been extraordinarily fatal, and carried off 1,297, children, chiefly, or young people; bronchitis and pneumonia have been very fatal. The deaths by violence are less numerous than is usual, but some are probably entered under erysipelas, which was fatal in 128 cases. One person died of hydrophobia. 5,139 persons died of zymotic diseases in the 13 weeks; 17,291 of all causes, in the quarter that ended on December 31st. The mortality greatly exceeded the average.

* Census, 1851. Part 2. Vol. i, p. cccxlv. M'Culloch's Stat. British Empire. Vol. ii, pp. 554-64.

† The total deaths in England and Wales were 438,239. The deaths, if the mortality of the towns had been the same (2·026 per cent.) as the mortality in the country (where the mortality is also much higher than it should be), would have been 377,180; the difference is 61,059.

MORTALITY OF THE METROPOLIS.

A Table of the Deaths in London from all Causes, Registered in the December Quarters of the Four Years, 1851-54.

CAUSES OF DEATH.	Quarters ended Dec.,				CAUSES OF DEATH.	Quarters ended Dec.,			
	1851	1852	1853	1854		1851	1852	1853	1854
ALL CAUSES	13,964	13,448	17,300	24,870	III. Scrofula	84	86	122+	117
SPECIFIED CAUSES	13,850	13,302	17,165	17,927	Tabes Mesenterica	196	167	245	245
I. Zymotic Diseases	3,137	2,851	4,256	5,189	Phthisis or Consumption	1,737	1,662	1,914	1,767
Sporadic Diseases:					Hydrocephalus	273	304	345	333
II. Dropsy, Cancer, and other Diseases of uncertain or variable Seat	574	598	707	656	IV. Cephalitis	113	111	154	137
III. Tubercular Diseases	2,309	2,219	2,636	2,402	Apoplexy	330	288	346	335
IV. Diseases of the Brain, Spinal Marrow, Nerves, and Senses	1,495	1,492	1,512	1,570	Paralysis	277	238	367	290
V. Diseases of the Heart and Blood Vessels	582	517	629	611	Delirium Tremens	33	27	25	35
VI. Diseases of the Lungs and of the other Organs of Respiration	2,510	2,359	3,201	3,050	Chorea	75	118	117	53
VII. Diseases of the Stomach, Liver, and other Organs of Digestion	781	807	828	872	Tetanus	45	40	54	41
VIII. Diseases of the Kidneys, &c.	160	168	200	178	Convulsions	467	508	501	515
IX. Childbirth, Diseases of the Uterus, &c.	114	121	118	135	Disease of Brain, &c.	139	174	191	137
X. Rheumatism, Diseases of the Bones, Joints, &c.	99	112	106	114	V. Pericarditis	32	26	24	38
XI. Diseases of the Skin, Cellular Tissue, &c.	24	34	27	40	Aneurism	25	17	28	50
XII. Malformations	50	58	52	40	Disease of Heart, &c.	525	474	577	543
XIII. Premature Birth and Debility	399	385	454	375	VI. Laryngitis	1,050	1,006	1,400	1,353
XIV. Atrophy	297	323	477	522	Pleurisy	50	35	44	38
XV. Age	606	556	687	553	Pneumonia	1,053	1,036	1,359	1,268
XVI. Sudden*	108	126	107	173	Asthma	216	151	221	170
XVII. Violence, Privation, Cold, and Intemperance	524	576	728	582	Disease of Lungs, &c.	96	91	123	94
I. Small Pox	339	74	60	280	VII. Teething	99	107	143	158
Measles	204	121	311	369	Quinsey	31	10	13	21
Scarlatina	603	952	668	1,207	Gastritis	10	13	13	22
Whooping Cough	283	316	697	419	Enteritis	89	96	94	78
Croup	93	76	130	132	Peritonitis	68	51	50	60
Thrush	33	27	41	30	Ascites	32	33	42	60
Diarrhoea	401	345	565	543	Ulceration of Intestines, &c.	33	38	35	26
Dysentery	39	31	41	39	Hernia	29	41	30	41
Cholera	15	14	728	982	Ileus	37	48	40	35
Influenza	34	41	33	31	Intussusception	8	11	10	8
Purpura and Scurvy	18	14	15	10	Stricture (of the Intestinal Canal)	13	9	19	16
Ague	6	5	4	3	Disease of Stomach, &c.	79	77	84	62
Remittent Fever	24	13	30	30	Disease of Pancreas .....	...	...	2	...
Infantile Fever	12	11	13	7	Hepatitis	40	61	59	59
Typhus	770	634	724	712	Jaundice	40	45	29	35
Metria, or Puerperal Fever, see Childbirth	69	43	42	45	Disease of Liver	157	157	183	178
Rheumatic Fever, see Rheumatism	21	24	19	19	Disease of Spleen	5	4	2	5
Erysipelas	116	67	84	128	VIII. Nephritis	5	12	8	5
Syphilis	43	37	45	40	Nephria (or Bright's Disease)	39	50	58	40
Noma or Canker, see Mortification	11	5	3	7	Ischuria	5	4	3	3
Hydrophobia	38	...	...	51	Diabetes	12	16	15	15
II. Hemorrhage	225	230	208	227	Stone	7	12	8	7
Dropsy	20	20	35	28	Cystitis	2	9	9	7
Abscess	8	14	16	21	Stricture of Urethra	17	9	15	20
Ulcer	6	2	13	5	Disease of Kidneys, &c.	73	76	84	75
Fistula	43	45	44	58	IX. Paramenia	1	2	4	2
Mortification	223	228	325	232	Ovarian Dropsy	14	7	15	17
Gout	11	10	10	14	Childbirth, see Metria	59	69	68	73
					Disease of Uterus, &c.	40	43	31	43
					X. Arthritis	3	8	4	3
					Rheumatism	51	55	61	67
					Disease of Joints, &c.	45	49	41	44
					XI. Carbuncle	9	10	18	22
					Phlegmon	7	13	5	11
					Disease of Skin, &c.	8	11	4	16
					XVII. Intemperance	15	20	27	12
					Privation	7	2	9	9
					Want of Breast Milk, see Privation and Atrophy	77	54	85	74
					Neglect	5	1	1	...
					Cold, see Privation	1	1	5	...
					Poison	28	26	30	29
					Burns and Scalds	90	96	83	57
					Hanging, &c.	55	93	73	64
					Drowning	58	108	113	103
					Fractures and Contusions	164	168	245	177
					Wounds	33	26	39	33
					Other Violence	12	11	25	23
					Causes not specified	114	146	225	211

* Under the head of *sudden deaths* are classed not only deaths described as sudden, of which the cause has not been ascertained or stated; but also all deaths returned by the coroner in vague terms, such as "found dead," "natural causes," &c., &c.

† The Weekly Returns of Births and Deaths in London for 1853 extend over a period of 53 weeks. The last 14 weeks, ended December 31st, constitute the December quarter in the above Table. An additional week was inserted in 1853 for the adjustment of the dates.

‡ In the 13 weeks, or 91 days, that ended December 30th (1854), 17,238 deaths were registered in London; in the quarter ended December 31st, consisting of 92 days, the deaths registered were 17,291.

On the Meteorology of England and Scotland during the Quarter ended December 31st, 1854. By JAMES GLAISHER, Esq., F.R.S., Sec. of the *British Meteorological Society.*

The warm period which set in on August 19th, continued till October 11th; the mean daily excess of temperature from October 1st to October 11th, was $2^{\circ}5$; from October 12th to October 28th the temperature was in defect to the amount of $3^{\circ}2$ daily; from October 29th to November 2nd it was $5^{\circ}6$ in excess; on October 31st it amounted to $11^{\circ}2$. On November 2nd a cold period set in, and continued, with the exception of a few days at the beginning of December, till December 12th; the average daily defect of temperature within this period was $2^{\circ}5$; from December 13th the temperature was, for a few days together, in great excess, then for a few days in defect, and then in great excess again, and so with rapid alternations till the end of the quarter; the average daily departure from December 13th to the end of the year was $2^{\circ}8$ in excess; the excess on the 14th, 15th, 22nd, and 25th, exceeded 11° on each day.

The temperature of the air for the quarter differed but little from the average. The range of temperature day by day has been large. The temperature of the dew-point was low, except in December.

The mean temperature of the air at Greenwich for the quarter ending November, constituting the three autumn months, was $49^{\circ}3$, being the same as the average of 83 years.

1854. Months.		Temperature of									Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
		Air.			Evaporation.		Dew Point.		Air— Daily Range.						Water of the Thames.
		Mean.	Diff. from Average of 83 Years.	Diff. from Average of 13 Years.	Mean.	Diff. from Average of 13 Years.	Mean.	Diff. from Average of 13 Years.	Mean.	Diff. from Average of 13 Years.	Mean.	Diff. from Average of 13 Years.	Mean.	Diff. from Average of 13 Years.
Oct.	49.4	+0.1	-0.3	47.1	-0.6	44.5	-0.9	17.5	+3.9	54.1	.309	In. -.012	Gr. 3.6	Gr. -0.1
Nov.	40.5	-2.0	-3.8	39.4	-3.3	37.9	-3.6	12.7	+2.0	45.5	.245	-.025	2.9	-0.2
Dec.	41.3	+2.4	+0.9	39.6	+0.6	37.0	+0.1	11.0	+2.0	41.7	.239	-.001	2.8	0.0
Mean.....	43.7	+0.2	-1.1	42.0	-1.1	39.8	-1.5	13.7	+2.6	47.1	.264	-.014	3.1	-0.1

1854. Months.		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal Move- ment of the Air.	Reading of Thermometer on Grass.				
		Mean.	Diff. from Average of 13 Years.	Mean.	Diff. from Average of 13 Years.	Mean.	Diff. from Average of 13 Years.	Amnt.	Diff. from Average of 39 Years.		Number of Nights it was			Low- est Read- ing at Night.	High- est Read- ing at Night.
											At or below 32°.	Be- tween 32° and 40°.	Above 40°.		
Oct. ....	.846	-.016	In. 29.724	+0.058	Gr. 536	+ 1	In. 2.6	-0.2	Miles. 87	11	12	8	23.5	49.8
Nov. ....	.916	+0.031	In. 29.728	+0.003	547	+ 5	1.4	-1.2	97	23	5	2	14.0	41.2
Dec. ....	.572	-.017	In. 29.768	-.009	546	- 4	1.4	-0.6	182	23	6	2	20.2	42.5
Mean.....	.878	-.001	In. 29.740	-.003	543	+ 1	Sum 5.4	-0.7	122	Sum 57	Sum 23	Sum 12	14.0	49.8	

Note.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Meteorological Table, Quarter ended December 31st, 1854.

NAMES OF STATIONS.	Mean Pressure of Dry Air reduced to the Level of the Sea.	Mean Temperature of the Air.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Mean Daily Range of Temperature.	Mean Monthly Range of Temperature.	Range of Temperature in the Quarter.	WIND.		Mean Amount of Cloud.	RAIN.		Mean Degree of Humidity.
								Mean estimated Strength.	General Direction.		Number of Days on which it fell.	Amount collected.	
Jersey	in. 29.698	° 49.0	° 69.0	° 33.0	° 6.9	° 24.0	° 36.0	2.0	Var.	6.0	60	in. 18.3	0.860
Falmouth .....	....	48.2	69.0	29.0	10.8	28.7	40.0	1.7	W.	6.7	57	11.1	....
Truro	29.669	48.1	73.0	20.0	12.3	36.0	53.0	1.7	N. & N.W.	7.1	62	10.8	0.846
Teignmouth	29.683	46.0	68.4	27.0	9.8	31.4	41.4	1.0	S.W. & N.W.	6.1	54	8.6	0.832
Exeter	29.701	46.0	69.0	21.0	13.1	34.1	48.0	2.5	N. & W.	5.7	44	6.0	0.832
Newport	29.663	45.9	73.8	22.6	13.2	37.9	51.2	2.3	N.W.	6.2	35	6.6	0.821
Worthing	29.632	44.7	63.4	28.8	10.0	26.2	34.6	1.0	N.W.	5.7	45	7.6	0.879
Clifton	29.664	44.1	67.0	21.0	10.7	34.9	46.0	0.8	N.W. & W.	6.2	60	6.3	0.865
Royal Observatory	29.654	43.7	72.8	25.9	13.7	35.2	46.9	....	S.W.	....	37	5.4	0.878
Oxford	29.660	44.1	68.5	22.0	12.4	34.4	46.5	1.8	W.	7.2	49	4.8	0.803
Stone	29.597	42.5	67.5	20.5	14.0	36.3	47.0	1.0	Var.	6.3	46	4.6	0.881
Royston	29.658	43.6	72.6	23.8	12.3	36.1	48.8	....	S., W., & N.	6.2	74	5.1	0.862
Bedford	29.624	44.5	70.5	23.0	10.4	35.0	47.5	....	W.	6.7	44	4.7	0.811
Norwich	29.570	43.8	67.5	23.0	11.9	32.8	44.5	1.6	S.W. & N.W.	6.0	45	8.3	0.865
Derby .....	....	42.4	64.0	20.0	12.8	35.0	44.0	....	....	....	....	4.3	....
Holkham	29.587	43.2	66.2	25.5	11.3	33.2	40.7	1.6	S.W. & W.	6.1	49	8.5	0.803
Nottingham	29.633	42.7	66.4	18.7	14.8	37.6	47.7	0.8	N.W. & S.W.	6.5	57	5.1	0.836
Gainsborough .....	....	43.2	65.0	25.0	10.2	30.5	40.0	0.6	S. & W.	4.8	43	4.5	0.819
Warrington	29.580	44.0	65.7	26.0	10.6	32.5	39.7	0.5	Var.	5.9	61	10.0	0.907
Liverpool	29.642	45.9	63.1	31.8	8.0	23.7	31.3	1.3	S.W. & N.W.	7.2	58	7.9	0.832
Wakefield	29.574	43.2	67.9	20.7	14.0	37.1	47.2	1.8	W.	6.4	47	6.7	0.838
York	29.565	41.7	63.0	19.0	12.0	33.3	44.0	....	Var.	....	42	5.0	0.840
North Shields	29.620	42.4	63.8	27.8	8.8	28.5	36.0	2.5	N.W.	4.3	58	10.8	0.879
Dunino .....	....	40.7	61.0	22.0	11.0	29.7	39.0	2.2	N.W. & S.W.	4.3	34	7.6	0.864
Arbroath .....	....	39.9	64.0	23.0	12.3	33.0	41.0	1.1	N.W. & S.W.	6.1	44	6.7	0.790

REVENUE.

An Abstract of the Net Produce of the Revenue of the United Kingdom in the Years and Quarters ended 31st March, 1854 and 1855; showing the Increase or Decrease thereof.—(Continued from page 90.)

Sources of Revenue.	Years ended 31st March.			
	1854.	1855.	Increase.	Decrease.
	£	£	£	£
Customs.....	20,200,933	20,496,658	295,725	....
Excise	15,101,591	16,179,169	1,077,578	....
Stamps	6,789,385	6,965,516	176,131	....
Taxes.....	3,141,694	3,036,136	....	105,558
Property Tax	5,378,035	10,515,369	5,137,334	....
Post Office.....	1,069,000	1,299,156	230,156	....
Crown Lands.....	395,888	272,572	....	123,316
Miscellaneous	1,107,004	731,578	....	375,426
Totals.....	53,183,530	59,496,154	6,916,924	604,300
			Net Increase £6,312,624	

Sources of Revenue.	Quarters ended 31st March.			
	1854	1855.	Increase	Decrease.
	£	£	£	£
Customs	4,203,091	4,424,151	221,060	....
Excise	2,173,132	2,384,416	211,284	....
Stamps	1,622,827	1,677,771	54,944	....
Taxes.....	99,302	194,897	95,595	....
Property Tax.....	1,942,096	5,740,708	3,798,612	....
Post Office.....	247,000	292,922	45,922	....
Crown Lands.....	65,000	66,000	1,000	....
Miscellaneous	284,520	240,411	....	44,109
Totals.....	10,636,968	15,021,276	4,428,417	44,109
			Net Increase £4,384,308	

An Account showing the Net Revenue and other Receipts of the Quarter ended the 31st of March, 1855; the Application of the same, and the Charge of the Consolidated Fund for the said Quarter, together with the Surplus or Deficiency upon such Charge.

Surplus balance beyond the charge of the Consolidated Fund, for the quarter ended January 5th, 1855, viz. :— Great Britain	£ 469,993	Amount applied out of the net income for the quarter ended March 31st, 1855, to redemption of Exchequer Bills (Deficiency) for the quarter ended January 5th, 1855	£ 1,519,534
Ireland	£469,993	Net amount applied to supply services in the quarter ended March 31st, 1855:—	
Balance of amount received for Exchequer Bonds appropriated by Parliament to Supply Services, remaining in the Exchequer on January 5th, 1855	250,466	Out of the Consolidated Fund	£10,606,259
Net Income received in the quarter ended March 31st, 1855, as shown in page 195	15,021,276	Out of Exchequer Bonds	658,368
Amount received in the quarter ended March 31st, 1855, for Exchequer Bonds issued	407,902	Out of Exchequer Bills (Ways and Means) ..	1,000,000
Amount of Exchequer Bills (Ways and Means) issued in the quarter ended March 31st, 1855	1,000,000		11,664,627
Amount received in the quarter ended March 31st, 1855, in repayment of advances for Public Works, &c.	189,644	Charge of the Consolidated Fund for the quarter ended March 31st, 1855, viz. :—	
	17,339,281	Interest on the Permanent Debt	5,602,431
Balance, being the deficiency upon the charge of the Consolidated Fund in Great Britain, and for which Exchequer Bills (Deficiency) will be issued	3,495,615	Terminable Debt	1,344,690
		Interest on Deficiency Bills	124
		The Civil List	100,020
		Other charges on Consolidated Fund	315,168
		Advances for Public Works, &c.	215,530
			7,577,903
		Surplus Balance beyond the charge of the Consolidated Fund, for the quarter ended March 31st, 1855, viz. :—	
		Great Britain	72,832
		Ireland	72,832
			£20,834,896

CORN.

Average Prices of Corn per Imperial Quarter in England and Wales, during each Week of the First Quarter of 1855; together with the Monthly and Quarterly Average—(Continued from p. 92.)

[Communicated by H. F. JADIS, Esq., Comptroller of Corn Returns.]

Weeks ended on a Saturday, 1855.		Weekly Average.					
		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
January	6	74 3	34 5	27 5	48 4	46 11	45 3
"	13	73 9	34 2	27 4	45 6	46 5	43 5
"	20	72 2	33 7	26 11	45 3	45 7	42 9
"	27	69 9	32 2	26 8	43 2	41 6	41 8
Average for January		72 5 $\frac{3}{4}$	33 7	27 1	45 6 $\frac{3}{4}$	45 10	43 3
February	3	70 11	32 2	26 7	42 9	44 2	43 0
"	10	71 1	32 6	26 2	42 1	43 9	40 5
"	17	70 3	31 9	25 7	45 3	43 1	41 0
"	24	69 1	31 5	25 6	41 1	43 3	39 8
Average for February		70 4	31 11 $\frac{1}{2}$	25 11 $\frac{1}{2}$	42 9	43 6 $\frac{3}{4}$	41 0
March	3	68 0	30 6	25 2	38 7	40 8	39 4
"	10	66 11	30 5	21 10	39 4	40 4	38 6
"	17	68 6	30 11	25 3	41 10	42 0	39 9
"	24	66 5	29 9	25 0	39 1	40 0	38 9
"	31	68 7	30 5	25 6	38 10	40 5	38 7
Average for March		67 8	30 4 $\frac{3}{4}$	25 1 $\frac{3}{4}$	39 6	40 8	38 11 $\frac{1}{4}$
Average for the Quarter		69 11 $\frac{3}{4}$	31 10	25 11 $\frac{3}{4}$	42 4	43 1 $\frac{1}{4}$	40 11

STOCKS AND SHARES.

Fluctuations in the Stock and Share Markets during the Months of January, February, and March, 1855.—(Continued from p. 92.)

Stocks and Shares.	Amt. of Share.	Amt. Paid.	Price on the			Highest Price during the Months of			Lowest Price during the Months of		
			1 Jan.	1 Feb.	1 Mar.	Jan.	Feb.	Mar.	Jan.	Feb.	Mar.
Consols.....	...	...	91 $\frac{1}{2}$	91 $\frac{1}{2}$	91 $\frac{1}{2}$	92 $\frac{1}{2}$	91 $\frac{3}{4}$	93 $\frac{5}{8}$	90 $\frac{1}{4}$	90 $\frac{1}{2}$	91
Exchequer Bills .....	...	...	5s. 6d. P.	5s. 6d. P.	7s. 6d. P.	7s.	9s. Pm.	9s. Pm.	4s.	3s. Pm.	5s. Pm.
RAILWAYS.											
Brighton	Stock	100	107	102	98	108	103	100 $\frac{1}{2}$	106	96 $\frac{1}{2}$	97 $\frac{1}{2}$
Caledonian	"	100	61	61 $\frac{1}{2}$	62 $\frac{1}{2}$	63	62 $\frac{1}{2}$	64 $\frac{1}{2}$	60	61 $\frac{1}{2}$	62 $\frac{1}{2}$
Eastern Counties	"	20	10 $\frac{1}{2}$	11	11 $\frac{1}{2}$	11 $\frac{1}{2}$	11 $\frac{1}{2}$	11 $\frac{1}{2}$	10 $\frac{1}{2}$	10 $\frac{1}{2}$	11 $\frac{1}{2}$
Great Northern	"	100	91 $\frac{1}{2}$	89 $\frac{1}{2}$	90	92 $\frac{1}{2}$	90 $\frac{1}{2}$	92	89 $\frac{1}{2}$	88 $\frac{1}{2}$	89 $\frac{1}{2}$
Great Western	"	100	68 $\frac{1}{2}$	66 $\frac{1}{2}$	63 $\frac{1}{2}$	70	66 $\frac{1}{2}$	66	66	64 $\frac{1}{2}$	63 $\frac{1}{2}$
London & North-Western	"	100	101	100 $\frac{1}{2}$	97 $\frac{1}{2}$	102 $\frac{1}{2}$	100 $\frac{1}{2}$	100 $\frac{1}{2}$	100 $\frac{1}{2}$	99 $\frac{1}{2}$	97 $\frac{1}{2}$
Midland	"	100	68 $\frac{1}{2}$	69 $\frac{1}{2}$	67 $\frac{1}{2}$	71	70	70 $\frac{1}{2}$	68	68 $\frac{1}{2}$	67 $\frac{1}{2}$
Lancashire and Yorkshire	"	100	73 $\frac{1}{2}$	74 $\frac{1}{2}$	74 $\frac{1}{2}$	76 $\frac{1}{2}$	75	77 $\frac{1}{2}$	73	74	74 $\frac{1}{2}$
North Staffordshire	20	17 $\frac{1}{2}$	18 $\frac{1}{2}$	12 $\frac{1}{2}$	12 $\frac{1}{2}$	13 $\frac{1}{2}$	13 $\frac{1}{2}$	13 $\frac{1}{2}$	12 $\frac{1}{2}$	12 $\frac{1}{2}$	12 $\frac{1}{2}$
South-Eastern	Stock	100	59	58 $\frac{1}{2}$	59 $\frac{1}{2}$	60 $\frac{1}{2}$	59 $\frac{1}{2}$	62 $\frac{1}{2}$	58 $\frac{1}{2}$	58 $\frac{1}{2}$	59 $\frac{1}{2}$
South-Western	"	100	84	84 $\frac{1}{2}$	84	85	86 $\frac{1}{2}$	86 $\frac{1}{2}$	83 $\frac{1}{2}$	84 $\frac{1}{2}$	83
York, Newcastle, & Berwick	"	100	74 $\frac{1}{2}$	76	71 $\frac{1}{2}$	77 $\frac{1}{2}$	76	74 $\frac{1}{2}$	71 $\frac{1}{2}$	73	71 $\frac{1}{2}$
York and North Midland..	"	100	52 $\frac{1}{2}$	54	49 $\frac{1}{2}$	54 $\frac{1}{2}$	54	50 $\frac{1}{2}$	52 $\frac{1}{2}$	50 $\frac{1}{2}$	49
Northern of France											
East Indian	20	16	33 $\frac{1}{2}$	34	33 $\frac{1}{2}$	35 $\frac{1}{2}$	34 $\frac{1}{2}$	35	33 $\frac{1}{2}$	33 $\frac{1}{2}$	33 $\frac{1}{2}$
	20	20	20 $\frac{1}{2}$	21	21 $\frac{1}{2}$	21 $\frac{1}{2}$	21 $\frac{1}{2}$	22 $\frac{1}{2}$	20 $\frac{1}{2}$	21 $\frac{1}{2}$	21 $\frac{1}{2}$

Fluctuations in the Stock and Share Markets during the Year 1854.

Stocks and Shares.	Amount of Share 30th December, 1854.	Amount Paid 30th December, 1854.	Price in 1854.		Highest Price during the Year.	Lowest Price during the Year.
			2nd January.	30th December.		
Consols .....	.....	.....	93 $\frac{1}{4}$	91 $\frac{5}{16}$	95 $\frac{7}{8}$	85 $\frac{1}{8}$
Exchequer Bills .....	.....	.....	6s. 6d. P.	6s. Pm.	22s. P.	2s. Dis.
RAILWAYS—						
Brighton	Stock	100	98	107	110 $\frac{1}{2}$	93
Caledonian	"	100	52 $\frac{1}{2}$	61	66 $\frac{1}{4}$	49 $\frac{3}{4}$
Eastern Counties	"	20	13	11	13 $\frac{3}{4}$	10 $\frac{1}{4}$
Great Northern	"	100	83 $\frac{1}{2}$	91	97 $\frac{1}{2}$	82 $\frac{1}{2}$
Great Western	"	100	82 $\frac{1}{2}$	69 $\frac{3}{4}$	84	68 $\frac{3}{4}$
London and North Western	"	100	102 $\frac{1}{2}$	101	108 $\frac{1}{2}$	92
Midland	"	100	61 $\frac{1}{4}$	69	72	54 $\frac{1}{4}$
Leicestershire and York- shire	"	100	65 $\frac{1}{4}$	73 $\frac{1}{2}$	70	57 $\frac{1}{2}$
North Staffordshire	20	17 $\frac{1}{2}$	11 $\frac{1}{2}$	13	13 $\frac{3}{4}$	10 $\frac{3}{4}$
South-Eastern	Stock	100	60 $\frac{1}{2}$	59	66 $\frac{3}{8}$	57 $\frac{1}{4}$
South-Western	"	100	77	84	86	72 $\frac{3}{8}$
York, Newcastle, and Berwick	"	100	63 $\frac{1}{2}$	74 $\frac{1}{2}$	77 $\frac{1}{2}$	61
York and North Mid- land	"	100	46 $\frac{3}{4}$	52 $\frac{1}{2}$	57 $\frac{1}{4}$	41 $\frac{3}{4}$
—						
Northern of France.. ..	20	16	34 $\frac{1}{4}$	33 $\frac{3}{4}$	35	27 $\frac{1}{4}$
East Indian	20	20	23 $\frac{1}{4}$	21	23 $\frac{1}{4}$	20 $\frac{3}{4}$

CURRENCY.

BANK OF ENGLAND.

An Account, pursuant to the Act 7th and 8th Victoria, c.32, for each Week ended on a Saturday, for the First Quarter of 1855.—(Continued from p. 95.)

[Compiled from the "Bankers' Magazine."]

ISSUE DEPARTMENT.

Date.	Notes Issued.	Notes in hands of Public.	Government Debt.	Other Securities.	Gold Coin and Bullion.	Silver Bullion.
1855.	£	£	£	£	£	£
Jan. 6 ...	26,988,455	19,681,700	11,015,100	2,984,900	12,988,455	...
" 13 ...	25,880,560	20,117,095	11,015,100	2,984,900	11,880,560	...
" 20 ...	25,509,215	20,045,620	11,015,100	2,984,900	11,509,215	...
" 27 ...	25,671,565	19,782,975	11,015,100	2,984,900	11,671,565	...
Feb. 3 ...	26,092,565	19,826,195	11,015,100	2,984,900	12,092,565	...
" 10 ...	26,063,365	19,527,975	11,015,100	2,984,900	12,063,365	...
" 17 ...	26,313,230	19,246,155	11,015,100	2,984,900	12,313,230	...
" 24 ...	26,362,055	19,061,870	11,015,100	2,984,900	12,362,055	...
Mar. 3 ...	26,512,985	19,098,255	11,015,100	2,984,900	12,512,985	...
" 10 ...	26,911,880	18,967,830	11,015,100	2,984,900	12,911,880	...
" 17 ...	27,479,975	18,984,010	11,015,100	2,984,900	13,479,975	...
" 24 ...	28,186,880	19,057,770	11,015,100	2,984,900	14,186,880	...
" 31 ...	28,510,230	19,488,310	11,015,100	2,984,900	14,510,230	...

BANKING DEPARTMENT.

Date.	Proprietors' Capital.	Rest.	Public Deposits.	Other Deposits.	Seven Day and other Bills.	Total Dr.
1855.	£	£	£	£	£	£
Jan. 6 ...	14,553,000	3,191,567	6,391,361	9,981,364	961,420	35,078,712
" 13 ...	14,553,000	3,228,009	2,294,292	10,842,702	1,271,406	32,189,409
" 20 ...	14,553,000	3,259,537	2,257,127	10,842,228	1,039,613	31,951,505
" 27 ...	14,553,000	3,268,316	2,897,554	10,698,258	1,003,540	32,420,668
Feb. 3 ...	14,553,000	3,266,198	3,740,512	10,583,727	958,820	33,102,257
" 10 ...	14,553,000	3,332,550	4,463,569	10,047,316	958,691	33,355,426
" 17 ...	14,553,000	3,335,840	4,898,602	10,174,871	894,585	33,857,198
" 24 ...	14,553,000	3,303,241	4,855,455	10,449,182	883,580	34,044,728
Mar. 3 ...	14,553,000	3,634,524	5,033,184	10,607,057	903,059	34,730,824
" 10 ...	14,553,000	3,639,849	4,828,237	11,149,103	906,730	35,076,919
" 17 ...	14,553,000	3,644,317	5,077,843	11,155,862	891,692	35,332,714
" 24 ...	14,553,000	3,649,414	5,539,467	11,146,540	835,583	35,724,004
" 31 ...	14,553,000	3,653,450	5,384,834	10,932,629	866,312	35,890,225

Date.	Government Securities.	Other Securities.	Notes.	Gold and Silver Coin.	Total Cr.
1855.	£	£	£	£	£
Jan. 6 ...	11,611,800	15,481,228	7,306,755	678,929	35,078,712
" 13 ...	11,781,427	14,035,963	5,763,465	658,554	32,189,409
" 20 ...	11,637,721	14,196,909	5,463,595	653,280	31,951,505
" 27 ...	11,528,652	14,320,311	5,888,590	683,115	32,420,668
Feb. 3 ...	11,538,652	14,590,176	6,266,370	707,059	33,102,257
" 10 ...	11,558,652	14,566,989	6,535,390	694,395	33,355,426
" 17 ...	11,538,227	14,584,340	7,067,075	667,556	33,857,198
" 24 ...	11,539,540	14,522,432	7,300,155	682,571	34,044,728
Mar. 3 ...	11,626,463	15,012,782	7,414,730	676,849	34,730,824
" 10 ...	11,542,385	14,880,844	7,944,050	709,640	35,076,919
" 17 ...	11,583,885	14,521,596	8,495,965	721,268	35,332,714
" 24 ...	11,581,067	14,279,061	9,129,110	734,766	35,724,004
" 31 ...	11,581,067	14,091,941	9,021,920	695,297	35,890,225

CURRENCY.—Continued.

COUNTRY BANKS.

Average amount of Promissory Notes in Circulation in England and Wales in each Week ended on a Saturday, for the last week of the Fourth Quarter of 1854, and for the First Quarter of 1855.—(Continued from page 96.)

[Compiled from the "Bankers' Magazine."]

ENGLAND AND WALES.			
Date.	Private Banks.	Joint Stock Banks.	Total.
1854.	£	£	£
Dec. 30.....	3,869,240	3,095,935	6,925,175
1855.			
Jan. 6.....	3,938,529	3,098,919	7,037,448
„ 13.....	3,997,483	3,152,675	7,150,158
„ 20.....	3,960,598	3,109,642	7,070,240
„ 27.....	3,897,863	3,048,535	6,946,398
Feb. 3.....	3,823,147	2,994,262	6,817,409
„ 10.....	3,775,852	2,979,960	6,755,812
„ 17.....	3,754,277	3,002,981	6,757,258
„ 24.....	3,727,318	3,029,195	6,757,233
Mar. 3.....	3,733,792	3,000,238	6,734,030
„ 10.....	3,759,888	3,042,518	6,802,406
„ 17.....	3,757,456	3,056,356	6,813,812

Fixed Issues—Private Banks, £4,607,455 ; Joint Stock Banks, £3,325,857.

Average amount of Promissory Notes in Circulation in Scotland and Ireland during the Four Weeks ended the 20th January, the 17th February, and the 17th March, 1855.—(Continued from page 96.)

SCOTLAND.			
Date.	£5 and above.	Under £5.	Total.
1855.	£	£	£
Jan. 20.....	1,439,752	2,679,768	4,119,523
Feb. 17.....	1,398,076	2,534,789	3,932,870
Mar. 17.....	1,375,537	2,436,042	3,811,573

IRELAND.

Date.	£5 and above.	Under £5.	Total.
1855.	£	£	£
Jan. 20.....	3,028,567	3,704,052	6,732,620
Feb. 17.....	3,100,514	3,685,174	6,785,690
Mar. 17.....	3,062,033	3,595,535	6,657,571

Fixed Issues—Scotland, £3,087,209 ; Ireland, £6,354,494.

QUARTERLY JOURNAL

OF THE

STATISTICAL SOCIETY.

SEPTEMBER, 1855.

On the Mortality arising from Naval Operations. By WILLIAM BARWICK HODGE, ESQ., *Fellow of the Statistical Society and of the Institute of Actuaries.*

[Read before the Statistical Society, 18th June, 1855. Present H.R.H. Prince Albert.]

To ascertain with precision the loss of life occasioned by war is an object of so much importance in every point of view, whether national or social, that whatever apology may be required for the manner in which the present subject is treated, none can be necessary for bringing it forward.

That so little should have been done towards the elucidation of the question, is no doubt partly attributable to the difficulty of obtaining accurate information with respect to it, but in a greater degree, perhaps, to the reluctance to dwell upon it felt by the public.

It certainly is a painful task to endeavour, in the words of a celebrated military writer, "To sound the stream of blood in all its horrid depths;" but in this country, where every citizen may be called upon to influence by his vote the question of peace or war, it is clearly the duty of all to inform themselves fully of the consequences that follow the adoption of the latter alternative.

Under the influence of such a conviction it was that I entered upon the present inquiry, with a view of bringing it in some form before the Society; and it was originally my intention to comprise in one paper the principal results relating to the mortality of the military and naval services during the last great war, for which purpose I had, at some cost of labour, collected the requisite materials. Finding however, that it was impossible to do justice to both branches of the subject in a single communication, I have been compelled in the present one to confine myself to the mortality in the Navy.

From the immense number of returns upon various subjects that were annually laid before the two Houses of Parliament during the period to which I refer, it is natural to suppose that an ample store of facts relating to questions of such importance to the nation as the strength and mortality of the navy would be found in public

documents, but the reverse of this is the case, and for such scanty information as we possess we are principally indebted to the industry of one or two private individuals.

The journals of the House of Commons from 1793 to 1815, so far as I have been able to discover, contain no returns as to the *personnel* of the navy beyond the annual estimates and numbers of men voted. These with the returns of killed and wounded, periodically published, are the only official documents to which we can refer; and even the latter it appears were not always given to the public.

Returns of killed and wounded, however, give but faint indications of the mortality occasioned by warlike operations whether upon land or at sea. From the toils of the march, and the exposure of the bivouac—amidst the exhalations of pestilential swamps—of crowded hospitals and ill-ventilated ships—in the bosom of the ocean itself and among the rocks and shoals upon its margin, the harvest of the victims of human strife is gathered more silently and more gradually but in far greater numbers than amidst the thunders of actual conflict. In the course of the present inquiry we shall see how comparatively small a portion of the deaths occasioned by war is formed by those which occur in battle.

The only attempt, that I am acquainted with, to give a general view of the losses in action of the navy, is to be found in the volume for 1853 of a valuable and well known publication, the “Companion to the Almanack,” where in an article entitled “Cost of War,” lists are professed to be given, chronologically arranged, of all the actions from 1793 to 1815 in which our naval and military forces were engaged, with the numbers of killed and wounded in each case. Having tested the numbers in this article I find that those relating to the army may be relied upon for accuracy, but although those given with respect to the navy are in general correct, the statement itself is very defective from the large number of actions omitted. The number of naval actions recorded is only 198, and the casualties stated to have happened therein 14,017, but in the table No. I. appended to this paper, I have registered the results of 576 actions, causing casualties to the amount of 19,382.

This table shews the mortality in the navy arising from battle and shipwreck in each year during the hostilities which took place in and between 1793 and 1815, and it has been derived from a careful examination of the particulars of each of the actions which occurred in the period.

The details of the killed and wounded were taken from James’s *Naval History*, a work which has been pronounced by a high authority to approach as near perfection as is possible for any human production. Sir Archibald Alison declares the accuracy of the author to be inimitable, and it is certainly deserving of the highest praise. Mr. James had the opportunity of examining at the Admiralty the log books of the various ships engaged, and he has recorded the particulars of a great many actions which were never given in the *London Gazette*, and for which we should search in vain in any published official documents.

In this table an attempt has been made to estimate the number of those among the wounded who died subsequently of their wounds.

The ordinary distinction between those said to have been killed, and those said to have died of wounds, is hardly accurate, because both classes might be correctly described by either form of expression, but the terms are generally received, and as they are convenient for preventing repetitions, I may perhaps be permitted to use them. It will therefore be understood that the expression "Killed" refers only to those who died from injuries at the moment of receiving them, and that "Died of wounds" refers to those who died of injuries subsequently to receiving them.

From there being no official returns, and very little precise information of any kind upon the subject, there is great difficulty in assigning the proportion of those who die of wounds received in naval engagements.

The only facts bearing directly upon the point that I am able to refer to, are to be found in Sir Gilbert Blane's account of the action fought in the West Indies, in the year 1782, by the Fleet under the command of Sir George Rodney. The author there states that 810 men were wounded in the engagement, of whom 60 died on board the ships, and 32 were sent to the Hospitals. From the small number so sent, it is most likely they were all serious cases, and the assumption that about one half of these only recovered would raise the probable deaths among the wounded to 76, or very nearly 1 in 10. This proportion is in some measure confirmed by the following:—

Return of Wounded among the Garrison at the Siege of Gibraltar, 1779-1783, taken from Colonel Drinkwater's Work.

Result.	Officers.	Non-Commissioned Officers and Rank and File.	Total.	Ratio per 1,000.
Died.....	1	109	110	99
Recovered—				
Discharged disabled	3	135	138	122
Returned to duty.....	31	839	870	779
Total wounded	35	1,083	1,118	1,000

We find by this return that those who died of wounds were 99 out of 1000 of the wounded, or as nearly as possible 1 in 10. A large portion of the injuries suffered by the garrison must, as in naval actions, have been inflicted by heavy artillery, and as the wounded possessed with respect to shelter and attendance the same advantages as men wounded at sea, it seems not improbable that their chances of recovery would be nearly the same. I have therefore adopted the result in which the two cases cited seem to agree, and taken 1 in 10 as the proportion of the wounded in naval engagements who die of wounds.

It is certainly to be wished that we had more extensive data upon which to found an opinion, but having given the subject very careful consideration, I am inclined to think the estimate does not

vary in a material degree from the truth, as there are collateral facts which point to a result not very dissimilar. The proportion of deaths among the wounded in engagements on land, was during a considerable period of the Peninsular war 130 per 1,000 or very nearly 1 in 8; and it can hardly be doubted that from the greater hardships to which wounded soldiers are exposed, the mortality among them must be in a greater ratio than among the wounded at sea, assuming the injuries in both cases to be equally severe.

Taking the whole of the casualties in action in the British service during the wars of the French Revolution, the proportion of those returned killed to the whole number injured in naval engagements was 100 in 398, or rather more than 1 in 4; while in engagements on land it was 100 in 529, or rather less than 1 in 5. It may perhaps be thought, that as a greater proportion of deaths were inflicted in the navy, the injuries suffered by the wounded would also be of a severer character, but this is not necessarily the case.

A large proportion of the wounds in naval actions are caused by round shot; of those in actions on land by musketry. An injury to a vital organ from a round shot would be more likely to prove fatal at once than one from a musket ball; a man mortally wounded by the latter might yet linger on for some time, a result less probable in the former case.

The following statement shewing the proportion of those severely, to those slightly, wounded in the navy, at the attack on Sebastopol (17th October, 1854), and in several regiments at the battle of Inkermann, appears to confirm this view.

Wounded.	In the Navy.	In the Army.
Severely	328	568
Slightly	672	432
	1,000	1,000

In the attack on Sebastopol, the shipping were not very closely engaged, if it had been otherwise, the proportion of severely wounded might perhaps have been greater.

The following facts, as to the results of surgical operations, may assist us in forming a judgment upon the subject:—

Professor Simpson, of Edinburgh, has recorded the results of 2,713 cases of amputation performed in various European hospitals; out of the whole number, 1,040, being 38 per cent., terminated fatally.

It is stated by Mr. Guthrie, that 1 out of 3 of the operations in the field, which came under his observation, were unsuccessful. Mr. Rowland Alcock, chief of the medical staff of the British auxiliary legion in Spain, found the proportion 1 in $2\frac{2}{11}$.

The deaths among the surgical cases treated in the Marylebone Infirmary, were 6 in 100. (*Statistical Journal*, Vol. VI., page 309.)

In applying these results to the numbers wounded in action, it must be borne in mind that “in the British service, every wounded man, although merely scratched, reports himself to the surgeon, in

order that he may get his smart money, a pecuniary allowance so named.”—(James, Vol. VI., p. 101.)

From the facts contained in the foregoing statements, the following would appear to be the probable average result of 1,000 cases of injury received in a naval engagement:—

Killed	250
Die of wounds	75
<hr/>	
Total deaths	325
Recover, but are disabled	95
<hr/>	
	420
Recover fit for duty	580
<hr/>	
Total.....	1,000

Notwithstanding the remark quoted from James, it is probable that in returns of killed and wounded, omissions must occasionally take place. In the table I have assumed that these omissions were equal to 2 per cent. upon the actual numbers, which gives an increase of 124 deaths.

To the casualties in action from wounds and injuries, has been added the number of those drowned or destroyed in ships sunk or burnt by the enemy; but the total being small in comparison, it did not appear necessary to state the annual losses of that kind, although it was desirable to keep them distinct from those next to be described.

In a separate column are given the numbers drowned or destroyed in each year, in ships accidentally wrecked or burnt. The mortality from this source, which it will no doubt surprise many to find double that arising from injuries received in action, was deduced from the annual lists of ships lost or destroyed, given by Mr. James in the appendices to his History, and reliance may be placed on the accuracy of the estimate as one subsequently made from Mr. W. O. J. Gilly's "Shipwrecks of the Royal Navy" (London 1850), agrees with it very nearly. This work is said to have been compiled from official documents in the Admiralty, to which the author had access, and the result deduced from it gives the number of deaths from similar causes in the same period at 13,675, or only 64 more than the number in Table I.

It may appear to some persons erroneous to attribute this class of mortality to the effects of War, seamen being, apparently, as much exposed to the risks of the seas in following their occupation during peace. It is certain, however, that those risks are greatly increased by the services required from the navy in the time of war, and it must be obvious that a larger number become exposed to them from the additional force kept up.

For a considerable portion of the war, the navy was principally engaged in blockading the enemy's ports, and the squadrons so employed were kept at sea in seasons and during weather when under other circumstances they would have gone into harbour.

During hostilities, too, it often happened that in the eagerness of pursuit, or the anxiety for escape, ships were placed in situations of danger which would otherwise have been carefully avoided.

Indeed it may be fairly assumed that the mortality from shipwreck among the mercantile marine, was in some measure increased by the war, as it is highly probable, that in tempestuous weather, vessels were lost in attempting to avoid hostile ports, which in time of peace would have afforded them secure asylums.

A comparison, however, with the losses from similar causes during peace, is the best criterion of the correctness of the view adopted as regards the navy. During the war, independently of those sunk or destroyed by the enemy,

28 line-of-battle ships
62 frigates
251 smaller vessels

In all 341 sail belonging to the Navy

either foundered or were wrecked, or burnt, from accidental causes, with a loss as shewn in the table of 13,621 lives, or about 666 per annum for the period considered. From Mr. Gilly's work, already quoted, it appears that from the end of 1815 to the end of 1850, a period of 35 years, the number of vessels similarly lost in the navy, all of them being of the smaller classes, was only 185, and the number of men 1320, being 38 annually, or in the ratio of rather more than 1 for every thousand men employed. It is undoubted therefore, that during the last war the risk of death to persons employed in the navy, from the accidental destruction of vessels, was 4 or 5 times greater than it has been since the peace. In reference to this fact, we must bear in mind the great improvements made, since the war, in the form and construction of our ships, which, with the introduction of steam-vessels into the navy, have probably tended to diminish the mortality from this cause, and, it is to be hoped, will have that effect in the present war.

If, however, we admit that the losses in this respect might, if the country had been at peace, have reached the annual rate of 2 per 1,000, which is nearly double the average from 1815 to 1850, the total number of deaths upon a peace establishment of 40,000 men, would only have amounted to 1,636, leaving 11,985 chargeable to the war.

The number of deaths being ascertained, it is necessary to compare them with the number of men liable to the accidents, by which the deaths were produced. I have already said that no official returns of the number actually serving in the navy, at any period during the war, have, so far as I am able to discover, been published, nor indeed any enumeration of the numbers of men, except the annual votes in parliament. Sir Gilbert Blane, however (*Select Dissertations*, p. 2), states that he ascertained at the Admiralty "there were on board the various British ships of war, in all parts of the world,"

On the 1st of January, 1811, 138,581	} the numbers {	145,000
" " 1812, 136,778		voted for those { 145,000
" " 1813, 138,324		years being { 140,000

In the column headed "Estimated average effective strength," it is assumed that the numbers serving in each year, bore a similar propor-

tion to the numbers voted, as in the average of the three years above-mentioned, but in the application of this rule it has been modified to a certain extent, as it appeared probable that in years when an increase upon the preceding year was voted, the relative deficiency was likely to be greater, and in years of diminution, less than the average which, during the whole war, appears to have been 110,180 men.

It is necessary to state, however, that those naval officers whose opinions I have obtained upon the subject, consider that the number of men actually employed was always greater than the number voted, and it is not improbable that the case was so, as Sir Gilbert Blane's statement refers only to men actually afloat, and some portion of the marines, who are included in the votes for the navy, are always serving on shore. The annual numbers voted are therefore given in an additional column.

In the lists of killed and wounded, the officers are distinguished from the petty officers and men. This was done in the hope of being able to determine the relative mortality of the two classes, but I have entirely failed in my endeavours to find a rule to be depended on as to the relative numbers of officers and men exposed to the contingencies of the service. Some person, however, more conversant with professional details, may perhaps be able to make the classification available; at present we can only deal with the collective numbers.

The period during which Great Britain was engaged in hostilities, from their commencement in 1793, to their final termination in 1815, was exactly 20 years and 165 days, or $20\frac{45}{100}$ years. Dividing by this period the total loss shewn in the table, we get the following result:—

Mortality in the Navy, caused by Battle or Shipwreck, during $20\frac{45}{100}$ Years of Hostilities in and between 1793 and 1815.

Causes of Death.	Mean Strength, 110,180.		Mean Strength 1,000.
	Total Deaths.	Annual Ratio.	Annual Ratio.
Hostile engagements	6,663	326	3
Ships accidentally wrecked or burnt.....}	13,621	666	6
Total	20,284	992	9

The present inquiry is not affected by the mortality arising from disease, except in so far as the latter may have been increased by war. At first sight there appears no reason why this should be the case. In the army we know that disease and the mortality therefrom are both frightfully multiplied by active service, but it would seem that the sailor, when not actually engaged in combat, is not subject to any hardships in war that he is not equally liable to in peace.

An examination of such facts as we are in possession of, leads nevertheless to a directly contrary opinion.

It must be confessed that the means we have of forming a judgment are limited, and my hearers not acquainted with the fact will no doubt share the astonishment expressed by an enlightened foreigner, M. Dupin, (*Force Navale de la Grande Bretagne*) on learning that it was not until the year 1810 that the English Admiralty required regular annual returns to be made to them of the deaths which took place on board the ships in the navy.

None of these returns were given officially to the world until the valuable reports upon the "*Health of the Navy*," presented to Parliament, were printed, but the latter commence only with the year 1830, and therefore do not assist us as to the period of the war. The numbers of the deaths for the years 1810, 1811, and 1812, were published in his "*Select Dissertations*" (page 2), by Sir Gilbert Blane, to whom we are indebted for nearly all that was known upon the subject previously to the publication of the reports I have mentioned.

This able writer has given in his works three distinct statements, derived either from official documents or his own recorded observations, as to the deaths in the navy, and from these we are able to form some opinion as to the rate of mortality at the periods to which they refer.

The first in chronological order, is a return to the House of Commons (*Select Dissertations*, p. 64) of all the deaths in the navy during the 5 years ending with 1780. They were as follows:—

Killed	1,243
Died	18,545
	<hr/>
	19,788

With a correction for those who died of wounds, this return would stand as follows:—

Killed	1,243
Estimated to have died of wounds	414
	<hr/>
Total in action	1,657
Disease and accidents	18,131
	<hr/>
	19,788

The average naval force voted for this period was 65,000 men.

The next statement shews the mortality in the British fleet upon the West Indian station, from January, 1780, to April, 1783, a period of 3 years and 3 months during which the author filled the office of Physician to the fleet. The deaths were recorded by himself, and were as follows:—

Killed and died of wounds	1,140
Drowned by shipwreck	3,000
Died from disease	3,200
	<hr/>
Total	7,340

The mean strength of this fleet was about 16,000 men.

The third statement is founded upon the returns already mentioned to have been required in 1810 to be made to the Admiralty, and gives the deaths comprised in those returns for 3 years, viz.:—

1810.....	5,183
1811.....	4,265
1812.....	4,211

13,559

The deaths in the hospitals are not included in these numbers, which are only returns of the deaths on board the ships, but Sir Gilbert Blane assumed those in the hospitals would on the average be the same as in 1813 when they were 977, and in all other respects he supposed the numbers quoted to give the total deaths for the several years. If, however, we compare them with the corresponding entries in the column of losses by shipwreck, in Table I., we shall find the latter cannot have been included.

The deaths from shipwreck, in the year 1811, were 2,242, and if we deduct these with the losses in action from the total number given by our author for the same year, we shall find the mortality from disease would appear to be only 19 per 1,000, whereas for each of the years immediately preceding and following it would be 40 and 34 per 1,000 respectively. Such a variation among so large a body of men (138,000) cannot be admitted, and the conclusion, therefore, is inevitable that the deaths from shipwreck are not included in Sir Gilbert Blane's numbers, and must be added to them to ascertain the total mortality.

These additions give as results for the three years (1810-1812)

Deaths on board ships	13,659
„ in hospitals (977 × 3)	2,931
„ by shipwreck	3,035

Total deaths 19,625

and the distribution of them was

Injuries in action	774
Shipwreck	3,035
Diseases and ordinary accidents	15,816

Total..... 19,625

From the foregoing three statements the following table has been drawn out, which, meagre as it is, contains, I believe, all that can now be known as to the general mortality of the navy prior to 1830.

Table showing the Annual Ratio to 1,000 Mean Strength of the Deaths from various causes in the Royal Navy.

Causes of Death.	Whole Naval Force, 1776-1780.	West Indian Fleet, 1780-1782.	Whole Naval Force, 1810-1812.
Casualties in action	5·1	21·0	1·9
Drowned by shipwreck	55·8	54·0	7·3
Diseases and ordinary accidents }		58·0	38·3
From all causes	60·9	133·0	47·5
Mean strength.....	65·000	16·000	138·000

Sir Gilbert Blane estimated the total mortality from all causes in the navy, during the latter years of the war, to have been annually 1 in 30·25, or 33 per 1000; and assuming that one-half only of the deaths on board ship were caused by disease, and the remainder by wounds and accidents, he came to the conclusion that the mortality from the former was only 1 in 42, or about 24 per 1000 annually. In this opinion he was followed by M. Dupin, but there can be no doubt it was erroneous.*

To facilitate the comparison between the periods of war and peace, the following table has been deduced from the reports on the health of the navy, printed by order of the House of Commons, already referred to. It contains the results of all the reports yet published, with the exception of those for the East Indian Station from 1840 to 1843: they are omitted on account of the Chinese War, which commenced in 1840.

Table showing the Annual Ratio to 1,000 Mean Strength of the Deaths in the Royal Navy (1830 to 1843.)

Station.	1830 to 1836, inclusive.				1837 to 1843, inclusive.					
	Mean Strength	Causes of Death		From all Causes	Mean Strength	Causes of Death.				From all Causes.
		Wounds, Injuries, and Accidents.	Diseases.			Diseases.	Wounds, Injuries, and Accidents.	Drowned.	Unknown.	
South American...	2,465	1·2	7·7	8·9	2,721	6·75	0·83	1·95	0·47	10·00
North American and West Indian.....	3,362	1·5	18·1	19·6	3,645	19·20	1·57	2·57	0·82	24·16
Mediterranean ..	7,958	1·8	9·3	11·1	9,936	10·59	1·91	1·03	0·77	14·30
Cape of Good Hope and West Coast of Africa	1,513	2·7	22·5	25·2	...	Return	not published.	...	...	...
East Indian*	1,849	2·2	15·1	17·3	1,883	14·34	2·48	4·42	0·53	21·77
Various commands.....	2,321	3·5	10·3	13·8	...	Return	not published.	...	...	...
Home	3,070	1·9	8·8	10·7	...	Return	not published.	...	...	...
Average	22,538	2·0	11·8	13·8	18,185	11·93	1·70	1·68	0·72	16·03

* The deaths in the East Indian command are only taken to the end of 1839, on account of the Chinese War.

This table shows the mortality in the navy during peace, for two periods of seven years each, in the first of which returns for the whole navy are given, while in the second those for the "Home" and "Various" commands, and that for the Cape of Good Hope and West Coast of Africa, which are not yet published, are wanting.

* It may, perhaps, excite surprise that so little reference has been made in this paper to M. Dupin's admirable work, which contains such valuable information respecting the British Navy; but as regards the mortality of that force M. Dupin admits that his facts were all derived from the works of Sir Gilbert Blane.

The average mortality for the whole navy, during the first period (1830–1836) was 13·8 or nearly 14 per 1000 annually, and for the second period (1837 to 1843) for the stations from which returns have been made 16·03 per 1000. As it is not probable that the returns still to be received will increase the average mortality of the second period, it appears pretty certain that the mortality throughout the navy, during peace, does not exceed 16 per 1000 annually, and I have, therefore, taken it at that ratio.

Considerable difference of opinion will probably exist as to how far the returns for 1810, 1811, and 1812, are to be taken as representing the general average of mortality from disease and ordinary accidents throughout the war; and likewise as to whether we are justified in assuming that, if the country had continued at peace from 1793 to 1815, the mortality from those causes would have been the same as it was from 1830 to 1843.

Upon the former point it may be useful to remark, that the mortality from disease among so large a body of men, generally employed in nearly similar proportions in various parts of the world, would not be likely to fluctuate very considerably, although the mortality from such causes as battle and shipwreck would naturally vary according to the services in which the men were engaged, and, as we see, did vary very much from year to year.

The condition of the seamen was greatly ameliorated in the early part of the war, after the mutinies into which they were driven by the system of injustice and oppression that then prevailed. Sir Gilbert Blane appears to have considered that the improvements affecting the health of the men had been generally adopted before 1810, if this were the case there existed no reason, except their being engaged in warlike operations, why the mortality from disease among them should have been greater than from 1830 to 1843.

If the returns for 1810, 1811, and 1812, are to be relied on, they shew that the mortality from disease and ordinary accidents during the war was, annually ($38\cdot3 - 16 =$) $22\cdot3$ per 1000, or about 140 per cent. greater than in peace.

This will, no doubt, be to many rather a startling result, and I might have hesitated as to adopting it, if it were not confirmed in a very remarkable manner by the experience of the squadron on the East Indian Station, during the war with China.

By the following table, deduced from one of the reports (ordered by the House of Commons to be printed on the 1st June, 1853) it appears not only that the mortality upon that station was more than doubled by the Chinese War, but that the principal increase was in the deaths caused by disease.

The mortality from the latter source for the ten preceding years, had averaged very nearly 15 per 1000 annually, but during the war it rose to $36\cdot78$ per 1000, being an increase of $21\cdot78$ per 1000, or about 140 per cent.

Table showing the Mortality in the Navy on the East Indian Station for Fourteen Years ending with 1843.

		Mean Strength.	Annual Ratio to 1,000 Mean Strength of the Deaths arising from				
			Diseases.	Wounds and Injuries.	Accidental Drowning.	Unknown Causes.	All Causes.
Peace	1830 to 1836	1,849	15·10	2·20			17·30
	1837, 1838, 1839....	1,883	14·34	2·48	4·42	0·53	21·77
War	1840, 1841, 1842....	5,156	36·78	3·49	4·01	5·95	50·23

The accuracy of this table cannot be called in question, and combining its results with those already given, it seems a fair and moderate estimate that the loss of life in the navy from diseases and ordinary accidents was doubled during the revolutionary war, and that the increased mortality from those causes amounted to 16 per 1000 annually, which, upon a force averaging 110·180 men, would give 36,051 for the total number of additional deaths, during a period of 20 $\frac{45}{100}$ years.

This calculation, however, assumes that the whole of the average force of 110·180 men would, had there been no war, have suffered the same rate of mortality as seamen in the navy during peace, and it is necessary, therefore, to examine whether this would have been the case. The peace establishment of the navy for the period would certainly not have exceeded an average of 40,000 men, as the number voted for 1816, the year of the expedition to Algiers, was only 33,000, the difference, therefore, between 110·180 and 40,000 or 70·180 men were annually exposed to the increased mortality of naval, as compared with civil life, not included in the foregoing estimate, which only compares the mortality among seamen during peace with that among seamen during war.

It may indeed be said that the men referred to, if not engaged in the navy, would have been following the maritime profession and exposed to its risks in the merchant service; but this can hardly be admitted, as the trade of the country was carried on, by some means, during the war; and the demand for the extra hands required, except indeed so far it was met by the employment of foreign sailors, must have been, directly or indirectly, supplied from among civilians.

In reference to this part of the question, therefore, it is necessary to compare the mortality of seamen with that among men of similar ages in civil life. In one of the reports already so frequently mentioned (that ordered by the House of Commons to be printed, 5th October, 1841), it is stated that the ages of the persons employed in the navy vary from 15 to 50, but that the greater proportion are between 20 and 40 years of age; the average age must therefore be less than 30. It appears by Mr. Farr's English Life Table (Registrar General's Report for 1844) that the mortality among the whole male population between the ages of 29 and 30 is 10 per 1000 annually, and if we are correct in assuming 16 per 1000 as the peace mortality

in the navy, the additional deaths among civilians converted into seamen would be at least 6 per 1000 annually; to this additional mortality, beyond that before referred to, the increased force of 70·180 men required by the war were subjected, and the number of deaths thereby caused, calculated upon the principle already laid down, was

Adding to this the number before given..... 36,051

We get an aggregate of 44, 662

as the total number of additional deaths arising from disease and ordinary accidents caused by the war.

In order that there may be no misconception as to the mode in which this number is obtained, it is advisable to state the calculation in another form, thus:

Total mortality from disease and ordinary accidents at the rate of 32 per 1,000 per annum for 20 $\frac{45}{100}$ years on an average force of 110·180 men..... 72,102
From which are to be deducted—

1. The mortality upon a peace establishment of 40,000 men for the same period at the rate of 16 per 1,000 per annum 13,088

2. The mortality among 70,180 civilians for the same period at the rate of 10 per 1,000 per annum..... 14,352

27,440

Leaving as before..... 44,662

From the various estimates that have been considered, the following has been drawn out, as the

General Summary of the Mortality in the Royal Navy among an average force of 110,180 Men during 20 $\frac{45}{100}$ Years of Hostilities occurring in and between 1793 and 1815.

Causes of Death.	Number of Deaths.		Estimated Number of Deaths that would have occurred from the same causes during Peace.	Excess caused by War.	
	Annual Ratio to 1,000 Mean Strength.	Total.		Total.	Proportion to 100,000 Deaths.
Casualties in action	3	6,663	....	6,663	10·524
Drowned or destroyed in ships accidentally wrecked or burnt	6	13,621	1,636	11,985	18·931
Estimated to have died from disease or ordinary accidents on board	32	72,102	27,440	44,662	70·545
Total	41	92,386	29,076	63,310	100·000

With reference to every description of armed force, it is of the greatest importance to ascertain what is the average proportion of men unable to attend to their duty from sickness. We have no information of this kind as to the navy.

Sir Gilbert Blane gives the numbers admitted into the hospitals

for several years, but he neither affords any information as to the duration of sickness among the patients, nor as to the number sick on board the ships. The Statistical Reports as to the Health of the Navy, so valuable in almost every other respect, are also defective in this.

From the Reports for the seven years ending with 1836, we learn that, out of an average force of 22,538 men, 30,039 cases of sickness or of injury occurred annually, being in the ratio of 1332·8 to 1000 of the mean strength, so that, on the average, every man was on the sick list once in nine months. As, however, no information is given as to the average time the cases were under treatment, we are unable to form any estimate of the numbers permanently sick.

Having determined with as much precision as the materials in our possession permit, the total loss of life in the navy during the war; we will now proceed to consider the relative losses arising from the different species of service in which it was employed.

The three tables in the Appendix numbered II., III., and IV., shew the relative force and the loss in killed and wounded.

In actions between fleets and squadrons (No. II).

In naval attacks upon land fortifications (No. III).

In actions between single ships (No. IV).

The two former tables contain the particulars of nearly every important engagement of the respective classes that has occurred in the British navy during the last 70 years, the battle of Navarino being the only material exception, but with regard to the table (No. IV.) of "actions between single ships," I have only thought it necessary to select a sufficient number of cases to give a just idea of the losses to which such actions give rise. They are registered in three subdivisions:—

1. Actions in which the enemy's vessel was captured.

2. Indecisive actions.

3. Actions in which the British vessel was captured.

The following is a general summary of the naval actions comprised in Tables II., III., and IV.

	Fleets and Squadrons.	Attacks on Land Defences.	Actions between Single Ships.			
			Enemy's Vessels Captured.	Indecisive.	British Vessels Captured.	All Classes.
Number of actions	13	10	18	6	11	35
Deaths in action, including $\frac{1}{10}$ of wounded	2,335	1,028	252	108	246	606
Deaths to 1,000 mean strength	21	21	50	79	119	71
Casualties to { Average ...	65	65	140	208	346	231
1,000 mean { Highest	212	147	271	470	674	674
strength { Lowest	19	7	4	67	180	4

The table No. I. shews the number of deaths resulting from 576 actions, to have been 6,663 or $11\frac{6}{10}$ to each action. The foregoing summary refers to 58 actions, producing 3969 deaths, but 4 of them causing 620 deaths, are not included in table No. I. Deducting

these, the summary shews the results of 54 actions, producing 3,349 deaths, or 62 to each, leaving 522 actions in which there were 3,314 deaths, or $6\frac{3}{10}$ to each. It is clear therefore that the three tables comprise a very large proportion of the important operations in which the navy was engaged between 1793 and 1815.

In these tables I have gone somewhat beyond the immediate object of this inquiry, thinking that the additional information as to the elements of success or failure in naval actions might not be without its utility. In addition to the force in ships and men, the number of guns, and broadside weight of metal, are specified.

Columns are also inserted shewing the proportion of loss in killed and wounded to each 1,000 men engaged; and likewise the proportion of similar losses inflicted by the same number of men upon their opponents. These particulars are given not only with respect to the British force, but likewise, in all cases where the information could be accurately obtained, with respect to that of the enemy; the number of vessels taken or destroyed in each action is also stated, and from the results may be drawn conclusions of some interest in reference to naval affairs.

The following statement taken from the facts in table No. II. (Fleets and Squadrons), shews that the loss inflicted upon us in our contests with the navies of different nations, has been generally in proportion to the reputation of their seamen for skill and discipline, and is an additional proof of the importance of maintaining our superiority in those respects.

Action.	Enemy's Fleet.	Proportion of British Loss in Killed and Wounded.			Number of Enemy's Ships.	
		To 1,000 British Engaged.	To 1,000 of the Enemy Engaged.	To each Ship taken or destroyed.	Engaged.	Taken or Destroyed.
Cape St. Vincent	Spanish	32	19	75	25	4
Trafalgar	Franco-Spanish	100	78	94	33	18
Nile	French	112	91	82	13	11
Camperdown ...	Dutch	100	115	92	16	9

The loss sustained in an action, is the price of the result obtained by it, and we must compare these elements with each other before we can arrive at a correct estimate as to either. By the above statement it is shewn, that the casualties of the British in the battle off Cape St. Vincent, were only 32 per 1,000 engaged, while each of the enemy's ships taken or destroyed cost 75 men in killed and wounded. At the battle of the Nile each ship taken or destroyed cost only 7 more, or 82 men in killed and wounded, although the proportion per 1,000 engaged was 112, or between 3 and 4 times as many as at Cape St. Vincent. From the general result of table No. II. it appears, that out of 204 hostile vessels engaged, 73 were taken or destroyed by the British, whose total loss, in killed and wounded, was 7,349, or a fraction over 100 for each vessel lost to the enemy.

To the table No. III, headed "Naval attacks upon Land Defences," it may, perhaps, be objected that the attacking fleets were in many of the cases opposed by ships of war as well as by land fortifications, which is certainly true.

The defensive vessels, however, are rather to be considered as floating batteries, for, being permanently moored, they did not possess the power of movement which is the essential characteristic of a ship in an ordinary naval action.

The table itself is of some interest at the present moment, when the relative power of a naval force under such circumstances is so much discussed.

The highest ratio of loss in any attack made by large fleets will be found in Lord Exmouth's Bombardment of Algiers, where the casualties reached 147 per 1000; but it must be mentioned the historian James asserts, that, in the official returns relating to the attack upon Copenhagen, the slightly wounded were not included, and that the total number of casualties was 1,200. I have not thought it right to vary the numbers given in the official returns, but if the historian's statement be admitted, the total loss in that action must have been at the rate of 150 per 1,000, which would be greater than at Algiers. There is great difficulty in ascertaining with accuracy the losses suffered in these engagements by the garrisons attacked, but we have precise information upon that point, with respect to the bombardment of Gibraltar, which took place in 1782. I have appended to the statement the particulars of the attacking force on that occasion, when, as is well known, the whole of the battering ships were destroyed, with a loss of nearly 1,000 men, which would probably have been very much greater, had not the assailants been so near their own coast; and although the ships were assisted by land batteries mounting 186 guns, part of which enfiladed the front attacked, the total loss of the garrison, consisting of 7,100 men, was only 84 in killed and wounded, being in the ratio of 11·8 per 1,000 engaged. An analysis of the facts relating to attacks of this description will shew that against a skilful and resolute enemy they are very hazardous operations.

An additional column has been given in Table IV. ("Actions between single ships") to shew the duration of each engagement. In reference to this point it is remarkable that the greatest ratio of loss suffered by the British, in any of the successful actions recorded, was in that which was the shortest. The engagement between the Shannon and Chesapeake lasted only 15 minutes, and in that time the British lost, in killed and wounded, 83 men, being in the proportion of 271 per 1,000 engaged.

Before concluding this paper, I would venture to suggest that the statistical reports as to the health of the navy, to which I have referred, might, in some respects, be improved. The deficiency as to the number permanently sick has already been noticed, and an alteration in this respect would be an advantage. It would likewise be desirable that the cases of death from wounds and injuries should be so classified as to shew the numbers that die from injuries received in action, and that it should be stated whether the cases of accidental drowning arise from shipwreck or otherwise.

TABLE I.

Showing the Mortality in the Royal Navy arising from Battle or Shipwreck during the Hostilities which occurred in and between 1793 and 1815.

Year.	Number of Men Voted.	Estimated Average Effective Strength, Officers and Men.	Number of Actions.	Killed.		Wounded.		Total Casualties in Action.	Drowned or Destroyed in Ships Accidentally Wrecked or Burnt.
				Officers.	Petty Officers and Men.	Officers.	Petty Officers and Men.		
1793.....	45,000	43,000	14	10	85	17	330	442	7
1794.....	85,000	80,000	13	19	349	47	1,072	1,487	514
1795.....	100,000	94,000	17	7	138	18	561	724	30
1796.....	110,000	105,000	21	3	75	13	250	341	1,219
1797.....	120,000	114,000	22	23	371	67	1,038	1,499	839
1798.....	120,000	115,000	31	29	337	64	1,017	1,447	311
1799.....	120,000	115,000	28	11	88	30	275	394	810
1800.....	111,666	107,000	29	3	61	28	258	350	637
1801.....	131,500	127,000	27	45	528	111	1,467	2,151	718
1802 (Peace).....	...	...	...	...	...	...	...	...	...
1803.....	80,000	80,000	22	1	27	8	78	114	118
1804.....	100,000	97,000	27	15	98	46	308	467	598
1805.....	120,000	115,000	27	27	593	83	1,703	2,406	358
1806.....	120,000	115,000	29	11	157	47	532	747	882
1807.....	129,330	124,000	25	9	118	30	436	593	1,840
1808.....	130,000	125,000	46	22	148	47	528	715	347
1809.....	130,000	125,000	36	23	150	50	587	810	742
1810.....	145,000	137,000	45	14	262	55	656	987	406
1811.....	145,000	139,000	27	11	147	45	533	736	2,242
1812.....	145,000	137,000	27	10	187	39	283	519	387
1813.....	140,000	138,000	46	23	209	45	584	861	140
1814.....	115,000	111,000	22	29	275	50	755	1,109	352
1815.....	85,000	81,000	4	1	38	5	84	128	204
Average.....	.....	110,180	.....	346	4,441	935	13,335	19,057	13,621
Total .....	.....	.....	576	14,270				.....	.....
Estimated deaths amongst the wounded,—10 per cent.									
Estimated omissions,—2 per cent.									
Drowned in action									
				4,787		14,270			
				1,427					
				124					
				325				325	
Total deaths caused by the enemy									
				6,663					
				13,621				13,621	
Drowned or destroyed in ships accidentally wrecked or burnt									
Total deaths arising from battle or shipwreck									

TABLE II.
Actions between Fleets or Squadrons.

No.	Date.	Action in or near	BRITISH.					ENEMY'S.														
			Commander.	Broadside.		Number of Ships.	Number of Men Engaged.	Loss.				Loss which 1,000 Men		Nation.	Number of Ships.	Broadside.		Number of Men Engaged.	Loss Killed and Wounded.	Loss which 1,000 Men		
				Guns.	Lbs.			Killed.	Wounded.	Total.	Sustained.	Inflicted.	Ships Lost.			Guns.	Lbs.			Sustained.	Inflicted.	Ships Lost.
1	12 April, 1782	West Indies	Lord Rodney	36	1,315	26,781	21,608	250	810	1,060	49	*	...	French ...	30	1,169	31,177	*	*	*	5	
2	1 June, 1794	English Channel	Lord Howe	26	1,087	22,976	17,241	290	858	1,148	67	290	...	Do. ...	26	1,090	27,684	19,769	5,000	253	58	7
3	14 Mar., 1795	Genoa	Admiral Hotham	14	557	12,711	8,810	71	266	337	38	68	...	Do. ...	13	490	12,307	9,520	600	63	36	2
4	14 Feb., 1797	Cape St. Vincent	Lord St. Vincent	15	620	13,105	9,508	73	227	300	32	105	...	Spanish ...	25	1,070	19,986	15,903	1,000	63	19	4
5	11 Oct., 1797	Camperdown ...	Lord Duncan ...	16	575	11,510	8,221	203	622	825	100	141	...	Dutch ...	16	517	9,857	7,157	1,160	162	115	9
6	1 Aug., 1798	Nile	Lord Nelson	14	507	11,332	7,985	218	678	896	112	376	...	French ...	13	545	13,887	9,828	3,000	305	91	11
7	12 July, 1801	Algebras	Sir J. Saumarez ..	5	188	*	3,100	18	102	120	39	568	...	Franco } Spanish }	9	391	*	7,360	1,762	240	16	3
8	23 July, 1805	Cape Finisterre...	Sir Robt. Calder..	15	596	15,843	10,500	39	159	198	19	45	...	Do. ...	20	774	19,233	13,942	476	34	14	2
9	21 Oct., 1805	Trafalgar	Lord Nelson	27	1,074	29,092	16,826	449	1,241	1,690	100	*	...	Do. ...	33	1,313	30,472	21,555	*	*	78	18
10	4 Nov., 1805	Bay of Biscay ...	Sir R. Strachan...	9	262	6,907	4,186	24	111	135	32	174	...	French ...	4	161	4,503	2,852	730	256	47	4
11	6 Feb., 1806	St. Domingo	Sir J. Duckworth	7	257	6,710	4,094	74	264	338	82	225	...	Do. ...	5	226	6,355	4,240	1,510	238	79	5
12	12 Mar., 1811	Lissa	Sir William Hoste	4	59	966	886	44	144	188	212	*	...	Franco } Italian }	7	112	*	2,500	*	*	75	2
13	20 May, 1811	Madagascar	Capt. Schomberg	4	73	1,518	903	25	89	114	127	185	...	French ...	3	66	1,389	1,130	167	147	101	1
			Total .....	...	...	...	...	1,778	5,571	7,349	...	...	...	...	...	...	...	...	15,405	...	...	73
			Average ...	...	...	...	...	...	...	...	65	207	...	...	...	...	...	...	...	163	54	...

* Numbers not ascertained.

TABLE III.
Naval Attacks on Land Defences.
 Unsuccessful actions marked thus (*).

No.	Date.	Place Attacked.	British Commander.	Force.		Men Engaged.	Loss.					Number of Enemy's Guns.
				Ships.	Broadside Guns.		Killed.	Wounded.	Total.	Per 1,000 Engaged.	Ships.	
1	24 July, 1797	*Teneriffe	Lord Nelson.....	8	189	2,885	141	105	246	85	1	40
2	2 April, 1801	Copenhagen	Lord Nelson.....	28	700	7,978	254	689	943	118	...	628
3	6 July, 1801	*Algesiras	Sir J. Saumarez	6	225	3,694	121	240	361	98	1	§
4	15 Aug., 1801	*Boulogne	Lord Nelson.....	§		§	44	126	170	§	...	§
5	July, 1806	Cape Licora	Sir Sidney Smith	3	72	1,177	6	30	36	30	...	2
6	3 Mar., 1807	Dardanelles	Sir J. Duckworth	11	324	5,077	29	139	168	33	...	§
7	5 Sept., 1814	In the River Potomac	Capt. Gordon	7	49	841	7	35	42	50	...	11
8	27 Aug., 1816	Algiers	Lord Exmouth....	19	348	5,558	128	690	818	147	...	425
9	6 Oct., 1840	St. Jean d'Acre.....	Sir R. Stopford ...	21	437	8,000	18	42	60	7	...	103
10	17 Oct., 1854	*Sebastopol	Admiral Dundas	21	571	10,700	44	266	310	29	...	1,200
				Total .....	...	...	792	2,362	3,154	...		
				Average ....	...	...	...	...	...	65		
13 Sept., 1782				{*Bombardment of {Gibraltar	{By Spanish bat- {tering ships....}	5,200	Estimated at	850	170	10	96	

§ Numbers not ascertained.

TABLE
Actions between

Action.			British.								
No.	Date of	Duration of	Ship.	Broadside.		Number of Men Engaged.	Loss.			Loss which 1,000 Men	
				Guns.	Lbs.		Killed.	Wounded.	Total.	Sus-tained.	In-flicted.
1	19 June, 1793	0 50	Nymphé	20	322	240	23	27	50	208	263
2	Oct., 1793	2 10	Crescent	18	315	257	...	1	1	4	315
3	17 June, 1794	1 10	Romney	25	414	266	8	30	38	143	594
4	5 Jan., 1795	5 0	Blanche	19	228	198	8	21	29	146	940
5	13 June, 1796	0 45	Dryad	22	407	254	2	7	9	35	295
6	26 Dec., 1797	1 35	Phœbe	22	407	261	3	10	13	50	287
7	21 April, 1798	1 15	Mars	41	984	634	30	60	90	142	458
8	20 Oct., 1798	3 30	Fisgard	23	425	284	10	26	36	127	405
9	29 June, 1799	2 30	Sibylle	24	503	371	5	17	22	59	391
10	20 Aug., 1800	3 0	Seine	24	434	281	13	29	42	119	374
11	19 Feb., 1801	1 30	Phœbe	22	407	239	1	12	13	54	1,435
12	10 Aug., 1805	3 30	Phoenix	21	444	245	12	28	40	163	289
13	10 Nov., 1808	3 20	Amethyst	21	467	261	19	51	70	268	908
14	5 July, 1809	6 50	Bonne Citoyenne	10	297	127	1	5	6	47	567
15	16 Feb., 1812	4 30	Victorious	41	1,060	506	27	99	126	249	790
16	1 June, 1813	0 15	Shannon	25	538	306	24	59	83	271	477
17	12 Aug., 1813	0 45	Pelican	9	262	101	2	5	7	69	237
18	26 Mar., 1814	2 15	Hebrus	21	467	284	13	25	38	134	398
Total .....			.....	...	...	...	201	512	713	...	...
Average ...			.....	...	...	...	...	...	...	140	527
19	13 May, 1793	1 30	Iris	16	186	217	5	31	36	166	244
20	13 Nov., 1800	2 0	Millbrook	8	144	47	...	12	12	255	1,426
21	11 April, 1804	3 30	Wilhelmina	11	134	149	...	10	10	67	289
22	7 Feb., 1813	3 35	Amelia	24	549	300	51	90	141	470	350
23	25 Feb., 1814	2 10	Eurotus	23	601	329	21	39	60	182	274
24	15 Jan., 1815	5 58	Endymion	24	664	319	11	14	25	78	329
Total .....			.....	...	...	...	68	196	284	...	...
Average ...			.....	...	...	...	...	...	...	208	340
25	18 Aug., 1798	6 0	Leander	26	432	282	35	57	92	326	1,022
26	14 Dec., 1798	*	Ambuscade	20	288	190	10	36	46	242	368
27	16 Feb., 1805	3 0	Cleopatra	19	282	200	22	36	58	290	175
28	50 Oct., 1808	1 30	Carnation	9	262	117	10	30	40	242	*
29	26 May, 1811	*	Alacrity	9	262	100	5	13	18	180	190
30	19 Aug., 1812	1 55	Guerrrière	24	517	244	15	63	78	320	82
31	17 Sept., 1812	0 43	Frolic	9	262	92	15	47	62	674	174
32	23 Oct., 1812	2 40	Macedonian	24	528	254	31	64	95	374	24
33	20 Dec., 1812	3 0	Java	24	517	379	22	102	124	379	90
34	14 Feb., 1813	0 25	Peacock	9	192	110	4	33	37	336	45
35	27 Aug., 1814	0 45	Reindeer	9	198	98	25	41	66	673	265
Total ...			.....	...	...	...	194	522	716	...	...
Average ...			.....	...	...	...	...	...	...	316	266
Total of the } three classes }			.....	...	...	...	483	1,230	1,713	...	...
Average of } the three } classes..... }			.....	...	...	...	...	...	...	231	378

* Numbers not ascertained.

IV.
Single Ships.

Enemy's.								Result.
Nation.	Ship.	Broadside.		Number of Men En- gaged.	Loss. Killed and Wounded.	Loss which 1,000 Men		
		Guns.	Lbs.			Sus- tained.	In- flicted.	
French.....	Cléopâtre	20	286	320	63	197	156	Enemy's Vessel Captured.
Do.	Réunion	20	310	300	81	270	3	
Do.	Sibylle	23	380	380	158	416	100	
Do.	Pique.....	19	273	273	186	681	106	
Do.	Proserpine	21	366	346	75	217	26	
Do.	Néréide.....	18	268	330	75	227	39	
Do.	Hercule.....	39	985	680	290	426	133	
Do.	Immortalité	21	450	330	115	348	109	
Do.	Forte	26	604	370	145	392	59	
Do.	Vengeance	26	498	326	105	322	129	
Do.	Africaine	22	306	715	343	480	18	
Do.	Didon.....	23	563	330	71	215	121	
Do.	Thetis	22	524	436	237	544	160	
Do.	Furieuse	10	279	200	72	360	30	
Do.	Rivoli.....	40	1,085	810	400	494	156	
United States...	Chesapeake	25	590	376	146	389	221	
Do.	Argus.....	10	228	122	24	197	57	
French.....	Etoile	22	463	315	113	359	121	
.....	.....	...	...	...	2,699	...	...
.....	.....	...	...	...	...	388	102
French.....	Citoyenne Française..	16	180	250	53	212	144	Indecisive.
Do.	Bellone	15	204	220	67	305	55	
Do.	Psyché	18	240	250	43	172	40	
Do.	Aréthuse	22	463	340	105	309	415	
Do.	Clorinde	22	463	344	90	262	174	
United States...	President	28	852	465	105	226	54	
.....	.....	...	...	...	463	...	...
.....	.....	...	...	...	...	247	151
French.....	Généreux	40	1,024	936	288	308	98	British Vessel Captured.
Do.	Baionnaise	16	150	280	70	250	164	
Do.	Ville de Milan	23	350	350	35	100	166	
Do.	Palinure	8	174	100	*	*	400	
Do.	Abeille	10	260	130	19	146	138	
United States...	Constitution.....	28	768	460	20	43	170	
Do.	Wasp.....	9	268	135	16	119	459	
Do.	United States	28	864	474	6	13	200	
Do.	Constitution	28	768	480	34	71	258	
Do.	Hornet	10	297	162	5	31	228	
Do.	Wasp.....	11	338	173	26	150	381	
.....	.....	...	...	...	519	...	...
.....	.....	...	...	...	...	145	194
.....	.....	...	...	...	3,681	...	...
.....	.....	...	...	...	...	260	149

* Numbers not ascertained.

On the Influence of Social Degradation in producing Pauperism and Crime, as exemplified in the Free Coloured Citizens and Foreigners in the United States. By THE REV. ROBERT EVEREST.

[Read before the Statistical Society, on Monday, the 20th November, 1854, and ordered by the Council to be printed.]

DURING a residence in India I had an opportunity of observing the social degradation of certain classes among the Hindoos, accompanied by great want of moral character among those so degraded. In the belief that the latter of these phenomena was the effect of the former, or that, wherever a degraded class existed, they would be found wanting in moral character, it was sought to bring this idea to the test of numerical calculation.

For this purpose it was necessary to assume that what I have termed the want of moral character, or, in other words, the tendency to crime and pauperism, might be measured by the proportionate numbers of each class that were to be found in the various prisons, jails, and almshouses throughout a country.

The United States, then, appeared to afford a good example, in its free coloured citizens, of a distinct class, socially degraded, and the object was to ascertain in what numbers, relative to the total population of each, they and the white race were held in confinement.

To this end I first collected from the "American Almanack," for 1853 (a small annual of statistics published in the country), an account of the numbers of each race, white and coloured, to be found in the State Prisons of several of the States at a certain period, and comparing these with the total population of each, as given by the census of 1850, I was enabled to make out a table, shewing the number of State Prisoners of each race to every 100,000 inhabitants.

But when I came to the numbers for the State of Massachusetts, where the total of foreign white prisoners was given separately from the native, I found, on comparison, that the proportion of the former was much greater in the prisons than of the latter.

Thus, by referring to the table (A), it will be seen that the native white Americans were in the State Prison of Massachusetts only in the proportion of 32 to 100,000 inhabitants, of foreigners 97 to 100,000, and of the coloured race no less than 552 to 100,000. It was evident, then, that to obtain anything like a correct estimate of the difference between the native white and free coloured races, the number of foreigners among the former must first be deducted. This could not be done from the imperfect information afforded by the publication above referred to, but I took the opportunity of a visit to the United States to resume the inquiry.

I first obtained at Boston the official report of the House of Reformation for juvenile delinquents, and of the Almshouses there, and afterwards, at New York, visited, or obtained the reports of the three State Prisons in that state, besides the City and County Jail, or Penitentiary, the Workhouse (where those under sentence for short

periods are confined), the Almshouse, and the House of Refuge for juvenile delinquents.

I must here take the liberty of stating, for those unacquainted with the subject, that this House of Refuge is, in fact, a house of reformation, where juvenile criminals and vagrants are sent instead of to jail. For further particulars respecting it I beg to refer to the note that accompanies Table E.

From New York I went to Philadelphia, and there pursued the enquiry, visiting all the public establishments that could throw light on it. After this I repaired to Washington, in the hope that, on application at the census bureau there, the question would be solved at once, but I was told that no such information, as I wished, had been printed.

I therefore made a point, in a journey of several thousand miles through the States, of visiting the State Prisons, County Jails, and Almshouses on my way, and obtaining such information as I could respecting their inmates.

From this I was enabled to draw out at length a table (A), for 16 of the principal States, shewing first, from the census, (1850), the total population of each class, native white, free coloured, and foreign, in the State, next the number of each class in the State Prison, and the proportion of prisoners to 100,000 inhabitants. As this information has either not been printed, or, if printed, only in a number of separate official reports for distribution among members of the local legislatures, and which are to be obtained only at the respective State Prisons, I have taken the liberty of offering it to the Society.

It will be observed by reference to the Table A, that the 16 States there enumerated possess an aggregate population of 12,143,978 native whites, 345,568 free coloured, and 1,790,807 foreigners. As the totals of each class, for the whole of the United States, amount only to 17,312,533 (including 32,658 individuals whose place of birth was unknown), 434,495 and 2,240,535 respectively, it is not probable that a more extended investigation would materially alter the results already obtained.

Again, referring to the table (A), it will be seen that, from the totals of populations and State Prisoners there given, the ratio of these latter to every 100,000 inhabitants has been found to be 22 for the white natives, 224 for the free coloured, and 78 for the foreigners, which numbers are to each other nearly in the ratio of 1:10, and 1:3½, or more correctly, 1:10.18 and 1:3.55, and this is the ultimate fact which it was desired to obtain.

The consideration of it enabled me to put together a quantity of scattered information I had gathered, during my journey, from the different Jails, Almshouses, and Houses of Refuge, for it evidently mattered not whether the number of prisoners and paupers was great or small, in every 100,000 inhabitants, so that the ratio of one class to the other was preserved. I therefore made out a Table (B), in which is stated the number of inmates of each class in certain of the City and County Jails, Houses of Refuge, and Almshouses which I visited, but the ratio of prisoners to every 100,000 inhabitants is omitted, and instead of that, the ratio of each class of prisoners to the native white, is given in a separate table, marked C; the first term of

the ratio, viz., the native white, not being expressed, as being in all cases equal to unity. These establishments being merely for subordinate districts or counties, for the most part, I have used in making the calculations the total populations of those districts or counties as given by the census, (1850,) rather than the total populations of the States which were taken for Table A. These different populations are given in a list at the end of the Table B, and in the right hand column of that table the number indicates which of those in the list has been taken for comparison.

From the general average at the bottom of the Table C, it will be seen that the ratio of native whites in the Jails, Police Prisons, &c., is to the coloured :: 1 : 5·48, in the Houses of Refuge :: 1 : 25·20, and in the Almshouses :: 1 : 4·84, and the ratio of the same to the foreigners is in the Jails, Prisons, &c. :: 1 : 4·96, in the Houses of Refuge :: 1 : 8·80, and in the Almshouses :: 1 : 6·03.

It will be observed that these ratios differ, in some degree, from those derived from the State Prisons, which I have placed in the right hand column by way of comparison, but the circumstances in the two cases differ greatly. In the State Prisons only crimes of a grave nature are punished, such as felony; in the County Jails and the Police Prisons, especially the latter, "assault and battery," "drunkenness," the disorders of a sailor ashore, and domestic squabbles, are all condemned to a short lock-up.

The circumstance that, in the general average, the ratio of foreigners to the native whites is more in the Almshouses, than of the coloured to the same (the latter being only 4·84, the former 6·63), arises, I believe from the circumstance, that there is rather an indisposition to admit them to the benefits of the Almshouses, than any lack of desire on their part to get there. At Louisville, Kentucky, I found the coloured were not admitted at all to the Almshouses; at Cincinnati, Ohio, from the Annual Report of Directors of Infirmary (March 1st, 1853), we learn that out of 3,269 cases in which relief was given during the previous year, in only 10 was it given to coloured people, and only for interment.

Referring again to the Table A, it will be observed that the number of State Prisoners to 100,000 inhabitants, differs greatly in different states, but it must be remembered that these are semi-independent states, each with its own code of laws; thus, in Connecticut, a number were in the State Prison for adultery, but nowhere else. In the Pennsylvania State Prisons, the separate system prevails, which is much more severe than any other, and this, consequently, may account for the small numbers to be found there. In the southern, or slave states, the number of State Prisoners appears to be smaller than in the north, but this, probably, arises from the circumstance that these are more inclined to the summary and less troublesome modes of flogging and hanging. "North Carolina," says the report of the State Prison (Richmond, Virginia), "has never departed from the old system of the gallows." It has no State Prison, neither has South Carolina; Georgia has one, but it is much found fault with by influential people; Mississippi has one, but no coloured are admitted there.

Upon the whole, then, the information derived from Tables B and

C does not invalidate the conclusions obtained from Table A, namely, that for equal numbers of different classes of the population, the ratio of coloured prisoners, and of foreign to the whole, is greater than of the white natives (thus evincing a greater tendency to poverty and crime in those two races); but on the contrary, confirms them.

Reverting again to the details of Table A, we find that in one of the States, the details of which are there given, the populations, &c. have been taken from the "American Almanack," (1853,) in which the whites are not subdivided into natives and foreigners, so that, to complete the table, it was necessary to assign to it a proportion of foreign criminals equal to what prevails in one or two of the contiguous States: the name of the State is Vermont. The number which is given upon analogy is marked with an asterisk, but, as the State to which it belongs is not among the most populous and important, no probable alteration in it would materially influence the general result.

The question then, being regarded for the moment as proved, it naturally occurs to us next to inquire what is the cause of such a result, which appears to be general.

1. The greater or less density of population in different States, by giving greater or less facilities for the concealment of crime, may affect the proportions existing between the criminals of different States, but cannot influence those between criminals of different races in the same state: that reason, therefore, may be dismissed from consideration.

2. The circumstance that the coloured do for the same crimes receive in some States a longer term of imprisonment than the whites, and thus would appear in the State Prisons at any given time in larger proportions than the latter, might account for a small inequality of ratio between the two classes, but not for the very large one we have ascertained, viz., 1 : 10·18. Take, for instance, the case of the eastern State Prison of Pennsylvania, at Philadelphia. In the years 1850, 1851 and 1849, 316 white prisoners were discharged, after having altogether completed a term of imprisonment amounting to 732 years, or 2 years, 3 months, and 24 days for each individual; while during the same period 91 coloured were discharged, having completed a total of 239 years—2 years, 7 months, and 15 days for each. Now these two periods are to each other very nearly in the ratio of the number of months of which each is composed, viz., :: 27 : 31, whereas the number of State Prisoners to 100,000 inhabitants of each class was, respectively, 10 and 198, an inequality by no means to be accounted for from a small difference in the duration of imprisonment.

3. It may be asserted that the greater tendency to crime and poverty among the coloured race may be caused by their want of education. Let us see how far this reason holds good.

If we assume the not being able to read and write, as the test of want of education, we shall find, that, in the 16 states, over which our investigation has extended, the total numbers, in such a predicament, of each class, were, by the census of 1850—

Native Whites.	Coloured.	Foreign.
420,497	69,630	166,161

Comparing these amounts with the total population of each class, as given in Table A, the number that cannot read and write of each, in every 100,000 of population, is

Native Whites.	Coloured.	Foreign.
3,463	20,439	9,278

These numbers are to each other, very nearly, :: 1 : 5·93 and : 2·68, whereas the ratio in which equal numbers of the different classes were found in the State Prisons, was by Table A, 1 : 10·18 and : 3·55.

It is clear then, that there is a portion of this inequality of ratios which want of education cannot account for, even though we suppose it everywhere to have produced a full, or proportionate, effect.

Besides, this reasoning will only hold good where the whole of the prisoners are uneducated, *i. e.*, cannot read and write.

In such a case if we had 1,000 or 100 individuals, and no other causes were in operation to influence the result, we might expect to find the different classes divided according to the ratios we have above laid down, *viz.*, 1 : 5·93 : 2·68. If we then took an equal number of educated prisoners, we might expect among them to find these ratios changed, for the same cause that increased the chance of any one class being found in greater proportion than the others among the uneducated would diminish the probability of its being found even in equal numbers among the educated. Thus, taking the case above, the native whites, we suppose, are found uneducated to the number of 3,463 in 100,000 inhabitants, and the coloured to the number of 20,439 in the same. Suppose also that the uneducated are confined in the proportion of 1 : 10, and the educated only in that of 1 : 20, then the number of uneducated prisoners would be $346 \div 2,043 = 2,389$, and the number of educated

$$\frac{100,000 - 3,463}{20} + \frac{100,000 - 20,439}{20} = 4,826 + 3,978.$$

Now we have not often any information upon the education of the prisoners in the official reports, but in 5 of the 16 states we have, and they belong to the most populous—Pennsylvania, Maryland, Indiana, Kentucky, and New York. We are there informed that out of a total of 2,539 confined in these 5 prisons, 1,332 could read and write, and 1,207 only could not. We cannot, therefore, ascribe the greater tendency to crime among the coloured to ignorance alone, though that may in some degree promote it.

Three other modes of accounting for these phenomena have been suggested to me. In the case of the negro, it is said that his physical organization is deficient, or, as the phrenologists would call it, the conformation of his skull. In the case of the emigrants, it is said they are the worst part of the population of their respective countries. Neither of these causes will account for the differences between the various classes of emigrants.

Thirdly, it has been said that the differences in crime between the emigrants arise from the Protestant and Catholic religion.

But this will not account for the great difference between Sweden and Norway, where both countries are Protestant.

Unable, then, to assign any other cause to the phenomena, we must revert to the one to which we alluded at the commencement of

this paper, viz., that the social degradation of a class, generally speaking, and of the coloured race in this particular instance, is the cause of its greater tendency to crime and poverty.

If we consider how it is that this happens, it naturally occurs to us, that they who have had the misfortune to be placed by birth in a degraded position, are not likely to entertain any friendly feelings towards those who from their infancy have been accustomed to treat them with contempt. Moreover, their lot in life is fixed; there is little or no hope of bettering their condition and of ensuring respect. They have, therefore, no inducement to practise self-denial for the present from a regard to the future. The sensual enjoyments of life are those alone which circumstances allow them to look to.

A train of conditions exactly opposite to these concur to form the character of the white citizen of the Free States. He is born, even if he be poor, among equals and friends. Nothing tends to awaken feelings of malice or antipathy within him. The honours of the state are fully and fairly thrown open to him, and he becomes conscious, from an early age, that upon himself alone depends the position in life which he is to attain. Thus he learns to practise self-denial, in the hope of bettering himself for the future. He is free-spoken and unaccustomed to deceit, resembling in these respects the nations of Europe, such as the Swiss and Norwegians, whose institutions are partly similar to his own. Like them, he becomes self-relying, frugal, and industrious, and, like them, does not shrink in early life from exiling himself from home, to return, after years of toil, with wealth and credit.

Besides, where every man is a legislator, his own feelings are interested in observing, and encouraging others to observe, the laws which he has himself assisted in making. He is no longer a mere labour-machine, drudging for the benefit of others, but a partner in the concern.

I have named these two nations, the Swiss and Norwegians, because among them I first had an opportunity of observing the effect of certain circumstances, analogous to those which prevail over the Free States, in developing the good feelings of mankind and elevating their views. The character of the Swiss is known to everyone. From Table A it will be seen how far that of the white native of the States compares with the general European one. The general ratio for State Prisoners is :: 1 : 3.55.

But from the information given in the official reports, I was enabled to make out a further table (D 1), for 12 of the states, shewing the number of European State Prisoners in each State, their native countries, and the total population of each description residing there. From this a further comparison was made of the tendency to crime in each nation separately, by ascertaining the number of each that were to be found in the State Prisons to every 100,000 inhabitants.

The numbers are much too small, in many cases, to be relied on, yet I cannot help pointing out as extraordinary, if only a coincidence, that the three nations whose institutions are most analogous to those of the United States, viz., Switzerland, Norway, and Holland, should agree with them in the comparative absence of criminality and pauperism among their peoples. (See Tables D 1, D 2, D 3, E, also Note on Table D 1.)

I have now only to state how far I have been made aware, since these inquiries were commenced, that the object of them has been anticipated.

It became known to me very early, that the greater tendency of the coloured race to commit crime had been remarked by M. Siljeström, the Swede, and by Michel Chevalier (*"Lettres sur l'Amérique du Nord."*) But, beyond this general fact, I knew nothing until my own investigation was nearly concluded, when, on visiting the State Prison of Virginia, at Richmond, I was favoured by Mr. Charles S. Morgan, the Superintendent, with a copy of his official reports for two years (1851 and 1853-4). In the first of these the subject is cursorily touched upon (p. 12), but in the latter, two tables are drawn out (pp. 44-45), one shewing the numbers of each class received in the State Prisons of 5 states, and the proportion which each bore to their respective populations. From this it would appear, that for equal populations the ratio of white criminals is to that of coloured :: 1 : 7·91. From the second table, which is that of the numbers confined in the prisons of eight States, he derives the ratio of 1 : 10·71. The first of these coincides best with the deductions I have obtained from Table A, considering that he has not separated the foreigners from the native whites.

In the Abstract of the Seventh Census of the United States (Washington, 1853), it is stated, that "the whole number convicted of crime in the United States for the year ending June 1st, 1850, was about 27,000; of these 13,000 were natives, and 14,000 foreign born. The native prisoners include coloured convicts, the numbers of whom it is impossible to state." Pauperism :—"The whole number of persons, who have received the benefit of the public funds of the different States for the benefit of indigent persons amounts to 134,972; of this number there were 68,538 of foreign birth, and 66,434 Americans. Of those termed Americans many are free persons of colour" (pp. 28-29). Now, compare

Natives.		Foreigners.	
Total Pop.	Criminals.	Total Pop.	Criminals.
17,737,505	: 13,000	and 2,210,828	: 14,000
:: 100,000	: 73·3	:: 100,000	: 633·2
Total Pop.		Total Pop.	
	Paupers.		Paupers.
17,737,505	: 66,434	and 2,210,828	: 68,538
:: 100,000	: 374·5	:: 100,000	: 3100·1

These ratios are even of greater inequality than those I have obtained.

I cannot quit the subject without begging to draw attention to No. 4, Table B, of those received or discharged from the City Prisons of New York. In three years, ending 1852, a total of 68,456 prisoners were received or discharged from the city prisons, which were thus divided—

	Native Whites.		Free Coloured.		Foreigners.	
	12,522	.....	3,757	.....	52,177	
Total Pop.....	260,743	.....	13,815	.....	240,989	

I advert to this, because there is undoubtedly some rowdyism, as it is called, and ruffianism, in New York, which is apt to impress travellers with an unfavourable idea of American institutions, but the blame, as may be seen here, does not lie with them.

The foreign parentage of the criminals and paupers has not been traced out, but, if we were to assume it to be what it has been proved in the case of the vagrant children admitted to the Houses of Refuge, namely, to that of the native white Americans, in the proportion of 8·8 : 1 (Table C); then, as we have before found, that, for equal numbers of population, the proportion of native white Americans was to that of the foreigners in the State Prisons :: 1 : 3·55, we may conclude that the proportion of native white Americans by parentage, as well as by place of birth, is to that of foreigners by parentage as well as by place of birth :: $\frac{1}{8\cdot8}$: 3·55 :: 1 : 8·8 \times 3·55 :: 1 : 31·240. So little are the institutions of the country favourable to the growth of crime. In fact, the effects of them are very similar to what are obtained under free trade. The manufacturer, deprived of protection, more than makes up, by increased vigilance and skill, for the want of artificial aid, and, in like manner, the influential classes, in those countries where power rests with the people, labour with wonderful solicitude in forming them to industrious and moral habits. An idle and dissolute man, invested with political power, is felt to be a public nuisance, and the doctrine that 'property has its duties as well as its rights' is fully acted upon.

That the degradation of their class does embitter the minds of the emigrants, and they wish to escape from it, may be further inferred from this, that the great majority prefer a residence in the United States to one in the adjacent British colonies. Out of nearly two millions of people (1,909,543), who left the United Kingdom for North America, in 10 years, ending with 1852 (see Cheshire's "Results of the Census"), 78·4 per cent., or nearly four-fifths, went to the United States. Yet there are no physical or material advantages in the United States. Wages are full as high in the colonies, and land to be had on as easy terms. If we turn to the South we find that the emigrants shun the slave states, where labour is degraded, quite as much as they do the colonies. Six of the border free states had, in 1850, a population of 1,403,629 foreigners, while the six adjacent slave states, with an area somewhat larger, had not above 190,138, less than one-seventh of the other. The difference is well known in the free states, and the reason I have always heard assigned for it by Americans, is the one I have given, viz., "that only a low, mean set, who have lost all self-respect, willingly go where labour is not honourable."

A singular confirmation of this remark may be found in the circumstance, that, of the emigrants settled in the slave states, a much larger per-centage is to be found in the State Prisons than of those who settle in the free states (see Table A). In the free states, the number of foreign state prisoners to every 100,000 inhabitants of the same class, varies from 42 to 105, while in the slave states it varies from 83 to 427. By going through the necessary steps we find the former class is found in the State Prisons to the average number of 70 for every 100,000, and the latter to the number of 142 for 100,000. The native white American being 22. The difference would probably be greater between the two former, but that the sparseness of population in the slave states renders concealment of crime very difficult, and often impossible.

The free states referred to are 10: Vermont, Massachusetts, Rhode Island, Connecticut, Michigan, New York, New Jersey, Pennsylvania, Ohio, Indiana. The slave states are 6: Maryland, Kentucky, Mississippi, Louisiana, Alabama, Virginia.

That this preference of the emigrants for the comparatively narrow slip of country, called the free states, is not owing to its superior climate may be seen by any one who will consult the map. The northern part of the State of New York, Michigan, and Wisconsin, are as much crowded by emigrants as any other parts; yet they are not farther to the north than Upper Canada. Maryland, Virginia, and Missouri are not more exposed to the heats of the south than Ohio, Indiana, and Illinois; yet the former are nearly deserted by emigrants, the latter swarm with them. What can it be that determines thither such a host?

We may then subdivide the "foreigners," of Table A, into two classes: the one living in the free states, which may be called the one sensible to degradation, and the other living in the slave states, which may be called insensible to degradation. The latter of these, as we saw, had a rate of criminality (142) approaching that of the free coloured, which is 224, and we may roughly compare the four classes thus:—let the native white American criminals = 1, the emigrant of the free states will be 3, of the slave states 6, the free coloured 10.

The late John Calhoun, Secretary of State, had also observed the greater tendency of the coloured race to commit crime, as appears by a manuscript of his, which was shewn me in the Census Office, at Washington.

NOTES ON THE PAPER.

1. There is, as I understood, a law in Louisiana, by which free coloured people are prohibited from living within the State, unless some respectable white person will be responsible for their good conduct. This may serve to account for the small per-centage of the race in the State Prison there. In the State Prison returns of the other slave states the effect of severe laws may be seen in a similar way.

2. If, instead of taking the knowledge of reading and writing as a test of education, I had assumed the per-centage of children attending school of each class, the result would not have been very different. Thus, for the principal states where public instruction is given, the school-attending native white children were—

In Massachusetts	$\frac{1}{3.9}$	of the whole population.
The coloured race	$\frac{1}{6.3}$	"
In New York the native white were.....	$\frac{1}{3.7}$	"
The coloured.....	$\frac{1}{5}$	"
In Pennsylvania the native white were.....	$\frac{1}{4}$	"
The coloured.....	$\frac{1}{5.2}$	"

Altogether, in these 3 principal states, the per-centage of native white children attending school is to that of the coloured nearly as 2 : 1.

The report I heard of the coloured children was that they are intelligent and quick enough when small, but, as they grow up, they cannot be brought to give their attention to their studies in the way the whites do. Probably this is because there are no prospects of reward held out to them in life. They are without hope, and consequently have only the sensual enjoyment of the moment to look to.

3. It will be observed that Wales is the only country of Europe whose natives give a per-centage of crime nearly as small as those of the United States, and those (Switzerland and Norway,) which have, and Holland, which until lately had, similar institutions. But the comparison is not fair between a whole country and a part. It is like comparing a whole picture and a part. Wales has no metropolis of its own. The metropolis is London, where great part of its resources are concentrated and re-distributed. Now, if we turn (*Journal of Statistical Society*, vol. xiii. p. 63,) to a paper by Mr. Barton, "On the influence of the subdivision of the soil in promoting the moral and physical well-being of the people of England and Wales," we find that the per-centage of crime in Wales is, to that of England and Wales, nearly in the ratio which we have obtained from the emigrants to the United States, viz. 1 : 3. It is also shewn in that paper that the per-centage of crime varies in the agricultural counties of England and Wales with the number of labourers kept, on the average, by each occupier of land, being least in those where the number is least, and increasing with them. But the small number of labourers kept is also a proof of equalization of wealth, which condition American forms tend most to preserve.

If we wish to see the whole effect of institutions we must take the metropolis into consideration. The average per-centage of crime for the whole country being = 1, the metropolis (Middlesex) = 1.61, the highest of any division in the country, while Wales is only .31.*

The superiority of character of free peoples is an old remark. "Of all governments," says Milton, "a Commonwealth aims most to make the people virtuous, noble, and high-spirited." This is so far incorrect, that a Commonwealth, which makes degraded classes, lowers as much as any other form. It is the equality of condition which elevates the mass.†

If we turn to Table D 1, shewing the proportion of criminals in the State Prisons, natives of different countries, we find (No. 14) those of British North America, and (No. 15) the white natives of the United States.

Now, in this case, we have the two great branches of the same British race side by side. Both have the advantage of inhabiting new countries where the rate of wages is high and there is abundance of unoccupied land. Seventy-eight years ago they were the same people. They are still identical in every respect but one. Yet the first has a proportionate criminality of 150 to 100,000 inhabitants, the second 23!

In Table D 1, the high criminality of the English, Irish, and Scotch emigrants (110, 95, 95) may be partly owing to the circumstance, that the identity of language enables bad characters from the United Kingdom to roam over the rural districts, where the friendly, unsuspecting way in which the inhabitants live, invites their depredations. The other foreigners are more confined to the great cities.

A correction which is due for the difference of time between the dates of the prison returns, and that of the census, has not been applied. It is slight, except for the lists marked D 2 and E; the

* See for this Mr. Rawson's Paper (*Journal Statistical Society*, vol. ii.)

† Another observation of similar import regarding the structure of language is, that the word "villany" means the act of a villain, or person of degraded caste.

first, of the State Prisoners in the eastern State Prison of Pennsylvania, for 20 years, the second, the inmates of the House of Refuge, New York, for 19 years.

The trifling difference in the criminality of the native white Americans, shewn in the two Tables A and D 1 (22 and 23), arises from the circumstance that in the latter more prison lists, embracing a longer period of time, have been taken into the comparison.

Additional Note on the Emigrants.

The preference of the emigrants for the United States has been denied, and it has been asserted that they only embark for the ports of the States on their way to Upper Canada. I cannot find any foundation whatever for this statement, on the contrary, there is a movement in the opposite direction. Large numbers take the route through Canada by the St. Lawrence, as the cheapest way to the western states of the Union (see for this, 3rd Report of Emigration Committee, 1838, p. 111). Besides, "It is certain (says the Census Report of 1851,) that the emigration from the United Kingdom contributes largely to the increase of the population of the United States."

The published returns are somewhat defective, but we may obtain, approximately, the numbers that have left for the States, thus,—

	Persons.
From the end of 1824 to the end of 1849 (25 years), there emigrated to } the United States from the United Kingdom.....	1,260,247
Allow for the preceding four years (1820 to 1824), on the supposition } that the number of emigrants to the States bore the same proportion } to those to British North America that they did in the succeeding four } years, 1824 to 1828 inclusive.....	33,833
Allow for the preceding twenty years, 1821 to 1800, at the same rate of } decrease as takes place from 1841 to 1821	51,610
Add for those that embarked in the first four months of 1850 (one-third } of the whole year)	74,359
Total.....	1,420,049
Natives of United Kingdom residing in United States, June 1850, by } Census	1,340,812
Difference.....	79,237

Or rather more than 5 per cent., a difference which is obviously too small for the losses by death in so long a period, and with the large mortality which is usually experienced by emigrants. We are therefore reduced to one of two suppositions, either a large number left the British ports without being registered, or they passed from the British Provinces into the States.

If this calculation be rejected on account of the uncertain elements which it contains, then we have still to explain how it happens that so large a proportion of the natives of British North America are also found in the United States. By the American Census of 1850, we learn that they amounted to 147,711 persons. The total population of British North America was, by the censuses taken in different parts of it during the years 1848-51 and 1852, 2,662,695 persons, while the total population of the United Kingdom was, by the Census of 1851, 27,675,145 persons. Now,

$$\begin{array}{l} 2,662,695 : 147,711 :: 100 : 5.547 \text{ and} \\ 27,675,145 : 1,340,812 :: 100 : 4.845. \end{array}$$

So that the per-centage of emigrants from the British Provinces was rather larger than it was from the parent country itself.

This similarity of per-centage may be accounted for upon the supposition that the masses in the two countries are influenced by a similar sentiment; but, if we reject that, the physical circumstances of the two widely differ, and there is no other means of comparison.

The migration is very large. The number of foreigners in Great Britain was by the last census under 60,000, from all parts of the world.

APPENDIX.

TABLE A.

Shewing the Total Amount of Population of each Description, Native White, Free Coloured, and Foreign, in several of the United States, from the Census of 1850; also the Number of Prisoners of each Description Confined in the respective State Prisons, and the Proportion of Prisoners of each Class to 100,000 Inhabitants.

	Total Population.			Number of Prisoners confined in State Prisons.			Number of Prisoners of each Class to 100,000 Inhabitants.		
	Native White.	Free Coloured.	Foreign.	Native White.	Free Coloured.	Foreign.	Native White.	Free Coloured.	Foreign.
1. Vermont	279,383	718	33,688	63	2	26	23	279	77*
2. Massachusetts	819,144	9,064	163,598	264	50	158	32	552	97
3. Rhode Island	119,975	3,670	23,832	24	6	15	20	163	63
4. Connecticut ..	324,095	7,693	38,374	95	41	21	29	533	55
5. New York	2,388,830	49,069	655,224	812	226	543	35	463	83
6. New Jersey ..	405,402	23,810	59,804	81	53	63	20	223	105
7. Pennsylvania	1,953,276	53,626	303,105	204	106	138	10	198	45
8. Michigan	339,223	2,583	54,593	70	16	45	21	619	82
9. Ohio	1,732,698	25,279	218,099	325	53	91	19	210	42
10. Indiana	919,278	11,262	55,537	102	14	26	11	124	47
11. Maryland	366,650	74,723	51,011	105	114	63	29	153	123
12. Virginia	871,393	54,333	22,953	121	67	19	14	123	83
13. Kentucky	728,711	10,011	31,401	114	18	34	16	180	108
14. Mississippi ..	290,347	..	4,782	37	No Coloured received.	5	13	..	105
15. Louisiana	188,558	17,462	67,308	94	10	109	50	57	162
16. Alabama	418,015	2,265	7,198	123	1	32	29	44	427
Totals and General Average ..	12,143,978	345,568	1,790,807	2,661	775	1,388	22	224	78
							:: 1 : 10-18 : 3-55		

Note.—Those of unknown nativity have not been included among the native white population, but they have among the coloured. In these latter, however, they only amount to a small fraction.

1. Vermont.—The numbers were taken from the American Almanack (1853). The total number of white prisoners there given is divided according to the ratio which obtains in Massachusetts and Rhode Island. 2. Massachusetts.—Numbers taken from American Almanack. 3. Rhode Island.—Official report for year ending Dec. 31st, 1852. 4. Connecticut.—Year ending March 31st, 1851. 5. New York.—Official reports of the 3 state prisons: Auburn, Sing-Sing, and Clinton, for the year 1850. 6. New Jersey.—The numbers were taken from the American Almanack (1854). Total confined Dec. 31st, 1852. 7. Pennsylvania.—Average from official reports for 3 years, 1851, 1850, and 1849. In the eastern prisons the natives were only given of those admitted during each year, and the difference of colour in those remaining at the end of the year. The total of whites, then, in confinement, at the end of each year, is divided according to the ratio obtained from the admissions. 8. Michigan.—The numbers were taken from the American Almanack (1854). Total confined, Nov. 30th, 1850. 9. Ohio.—The difference of colour is not stated in the official report of the Columbus State Prison, which I obtained, but the natives are given of those in confinement at the end of the year (30th Nov. 1851), the total number being 469. At the time of my visit to the prison, Dec. 9th (1853), the total number of prisoners, as stated to me by the warden, then was 531, of which the coloured were 60. Now 531 : 60 :: 469 : 53, total calculated number on Nov. 30th, 1851. 10. Indiana.—Total number in confinement 30th Nov. 1850, from the official report for the year, of the state prison, Jeffersonville. 11. Maryland.—Total number in confinement, Nov. 30th, 1851, from official report of state prison, Baltimore, for the year. 12. Virginia.—Total number remaining 30th Sept. 1851, from official report of state prison, Richmond. 13. Kentucky.—Total number in prison 20th Oct. 1851, from official report of state prison, Frankfort, Kentucky. 14. Mississippi.—Total number in prison 30th Nov. 1852, from the official report of the state prison, Jackson. I was informed by the keeper that no coloured people were sent here. 15. Louisiana.—From a manuscript which the warden allowed me to copy of the number in confinement at the time of my visit to the state prison, Baton Rouge (Jan. 2nd, 1854). 16. Alabama.—From report of state prison, Wetumpka. Total number confined Oct. 1st, 1852.

TABLE B.

Showing the Number of Prisoners of each Class, Native White, Free-Coloured, and Foreign, in the Jails and Houses of Correction of the different States, also the same for the Inmates of Almshouses or Paupers, and the Inmates of Houses of Refuge. In the latter case the children of foreign parents are substituted for the "Foreign."

	Jails and Houses of Correction.			Houses of Refuge.			Almshouses and Paupers.			No. in the List of Total Populations used in calculating the Ratios.
	Native White.	Free Colord.	Foreign.	Native White.	Free Colord.	Foreign.	Native White.	Free Coloured.	Foreign.	
1. Massachusetts	6,556	498	5,072	...	...	...	...	...	...	1.
2. Boston City Report....	...	...	...	18	...	140	614	20	743	2.
3. Rhode Island	135	10	196	...	...	...	...	...	...	3.
4. New York, received or discharged from City Prisons	4,174	1,252	17,392	...	...	...	...	...	...
5. Blackwell's Island (City and County Jail) Nov. 10, 1853	255	92	863	...	...	...	...	...	...	4.
6. Admission to Penitentiary Hospital, 1850.....	376	137	1,496	...	...	...	...	...	...
7. Workhouse (Petty Offenders under Sentence)	104	17	298	...	...	...	...	...	...
8. House of Refuge—Average for 5 yrs., 1848-52 inclusive .....	...	...	...	54	25	209	...	...	...	New York S. (Sec A.)
9. Almshouse, Blackwell's Island, and Coloured Home—Admitted, 1850 .....	...	...	...	...	...	...	614	508	1,741	
Do. Bellevue Hospital and Coloured Asylum .....	...	...	...	...	...	...	617	53	3,081	4.
10. Out-door Relief to poor—in money—persons relieved, 1850.....	...	...	...	...	...	...	2,908	474	8,594	
In fuel.....	...	...	...	...	...	...	3,537	1,984	20,547	
11. Philadelphia House of Refuge—Avg. of 1852, 51, 50 .....	...	...	...	156	104	45	...	...	...	Pennsylvania State (A.)
12. County Jail, Moyamensing	60	44	49	...	...	...	...	...	...
Confined, not sented.	3,252	1,626	*2,655	...	...	...	1,069	369	3,416	5 and 6.
13. Blockley Almshouse—Admitted during year 1850-51 .....	...	...	...	...	...	...	...	...	...
14. Pittsburg County Jail, Western Philadelphia.....	52	15	*38	...	...	...	...	...	...
15. Maryland, Baltimore, County Jail—Commitments	801	447	*480	...	...	...	...	...	...	7.
16. Baltimore City and County Almshouse .....	...	...	...	...	...	...	712	394	1-179	7.
17. Ohio, Cincinnati—Summary of indoor and out-door relief .....	...	...	...	...	...	...	851	No colord.	2,408	8 and 9.
Columbus, Franklin Infirmary .....	...	...	...	...	...	...	70	Do.	146	
18. City and County Jail	8	8	5	...	...	...	...	...	...	9.
19. Virginia (Richmond) Almshouse .....	...	...	...	...	...	...	77	23	35	10.
20. County Jail and City do.	25	12	22	...	...	...	...	...	...	10.
21. New Orleans—House of Refuge for female children .....	...	...	...	8	No coloured	73	...	...	...	11.
Total	15,798	4,153	28,566	231	129	467	11,099	3,875	41,850	

Note.—1. Numbers taken from American Almanack.—2. Report for year ending March 31st, 1853.—3. Official Report, 1852.—4. Average of 1852, 51, 50. These City Prisons are Police Prisons.—5. Verbally given at my visit.—6. Report —7, Verbally given at my visit.—8. Reports.—9 and 10. Ditto.—11. Ditto.—12. Ditto.—13. Ditto.—14. Verbally given.—15, 16, 17. Reports.—18. Verbally given.—19. Ditto.—20. Ditto.—21. Ditto.

List of the Total Populations of States, Counties, &c., used in calculating the Ratios of the above.

	Native White.	Free Coloured.	Foreign.
1. Massachusetts State	819,144	9,064	163,598
2. Boston City, or County of Suffolk	93,147	2,038	49,632
3. Rhode Island State	119,975	3,670	23,832
4. New York County	260,743	13,815	240,989
5. Philadelphia County	271,110	19,761	117,891
6. Alleghany County	91,445	3,431	43,414
7. Baltimore County	135,350	29,075	39,503
8. Hamilton County	87,785	3,600	65,459
9. Franklin County	34,516	1,607	6,786
10. Henrico County (Richmond)	21,290	3,637	2,536
11. Orleans County	42,620	9,961	51,227

Note.—Nos. 1, 3, 6 and 11, were omitted in computing the ratio for the almshouses, and Nos. 8 and 9 (Ohio) were not used for the Coloured, as none were admitted there. Nos. 2, 8, and 11 were omitted in computing the ratio for the jails. In taking the ratio for the houses of refuge but four returns were used, viz., No. 2, that for the state of New York, and that for the state of Pennsylvania (which are given in Table A), and No. 11. The second and third of these were alone used for the coloured, as in the houses of those alone the coloured were admitted.

TABLE C.

Shewing the Proportion which the Prisoners and Paupers, from Equal Numbers of the respective Populations, bear to each other in each Class, the Native White American being in each case considered as unity.

	Jails, &c.		Houses of Refuge		Almshouses and Paupers.		State Prisons.	
	Colord.	Foreign.	Colord.	Foreign.	Colord.	Foreign.	Colord.	Foreign.
1. Massachusetts	6·87	3·87	....	....	....	....	12·08	3·35
2. City Rept. ....	....	....	....	14·94	1·42	2·16	....	....
3. Rhode Island	2·43	7·34	....	....	....	....	8·00	3·15
4. New York :—								
4, 5, 6, 7	5·66	4·42	....	....	....	....	13·14	2·37
8 .....	....	....	25·50	16·00	....	....	....	....
9 & 10 .....	....	....	....	....	7·39	4·77	....	....
Pennsylvania :—								
11. House of R. ....	....	....	24·25	1·88	....	....	....	....
12 & 14	7·82	1·16	....	....	....	....	19·80	4·50
13 .....	....	....	....	....	4·73	7·35	....	....
15	2·60	2·05	....	....	....	....	5·24	4·24
16 .....	....	....	....	....	2·58	5·67	....	....
17 .....	....	....	....	....	....	22·08	11·05	2·31
18	8·13	3·22	....	....	....	....	....	....
19 .....	....	....	....	....	1·74	3·82	8·78	5·92
20	2·81	7·42	....	....	....	....	....	....
21 .....	....	....	....	20·43	....	....	....	3·24
General Average ...	5·48	4·96	25·20	8·80	4·84	6·63	10·18	3·55

TABLE D 1.
Shewing the Numbers of Foreign Prisoners in the State Prisons of several of the States, and their Nationalities.

1. England. 2. Ireland. 3. Scotland. 4. Wales. 5. Germany. 6. France. 7. Spain and Portugal. 8. Italy. 9. Denmark and Sweden.
 10. Belgium. 11. Holland. 12. Norway. 13. Switzerland. 14. British North America. 15. White Natives, United States.

In the State Prisons of	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. Rhode Island	5	12	...	...	...	...	...	...	...	...	...	...	...	2	43
2. Connecticut	1	16	...	...	...	...	...	...	...	...	...	...	...	2	126
3. New York	137	345	20	1	109	8	...	3	2	1	...	...	...	60	1,145
4. Pennsylvania	13	86	4	3	70	4	...	...	...	...	...	...	...	5	261
5. Maryland	5	20	2	...	32	...	...	...	...	...	...	...	...	13	105
6. Ohio	14	42	5	2	21	3	...	...	...	...	...	...	1	3	92
7. Indiana	2	9	2	...	7	2	...	1	...	...	...	...	1	1	102
8. Kentucky	3	16	1	...	12	...	...	...	...	...	...	...	...	1	116
9. Mississippi	1	4	...	...	...	...	...	...	...	...	...	...	...	...	36
10. Louisiana	8	50	...	...	17	14	...	3	4	...	...	...	...	2	94
11. Alabama	5	14	4	...	...	...	1	...	2	...	...	...	...	2	123
12. Virginia	1	10	3	1	4	...	...	...	...	...	...	...	...	...	121
Total	195	624	43	7	273	31	4	8	4	1	0	0	2	91	2,364
Total Population of the above States	178,013	656,271	45,007	23,372	408,849	40,589	2,972	2,967	1,401	881	3,926	589	8,149	60,774	10,300,826
Number of Prisoners to 100,000 inhabitants	110	95	95	30	67	76	135	270	285	113	less than 25	less than 170	25	150	23

1. Number accounted for in 15 months, ending Dec. 31st, 1852. 2. Number in confinement, March 31st, 1851. 3. Number remaining, Dec. 1st, 1848, and received the two following years. 4. From reports of eastern and western prisons for 1849, 1850, 1851. 6. Ohio.—Report for 1851. 7. Indiana.—Report for year 1850. 8. Kentucky.—Report for year 1851. 9. Mississippi.—Report for year ending Nov. 30th, 1852. 10. Louisiana.—Manuscript report for 1853. 11. Alabama.—Report for 1852. 12. Virginia.—Report for 1851.

TABLE D 2.

Shewing the Number of Prisoners received in the Pennsylvania State Prison, Philadelphia, for 20 Years, ending 1850, and their Nativities.

The Numbers at the head of the Columns indicate the same Countries as in Table D 1.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
Prisoners received	79	221	14	...	133	14	1	1	5	2	3	...	1	10	2,041
Total Population in the State	38,048	151,723	7,292	8,920	79,054	4,083	135	172	230	126	257	27	914	2,500	1,953,276

TABLE D 3.

Shewing the Number of Persons receiving Relief, and their Nativities, in several of the States.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. New York, out-door relief, 1850	1,228	24,053	528	35	2,597	224	7	...	...	...	...	...	...	...	6,455
2. Philadelphia: Blockley Almshouse, year ending May 1st, 1851	286	2,520	76	3	479	16	3	4	6	3	...	...	4	...	1,069
3. Baltimore City and County Almshouse, 1852	55	562	28	1	463	8	...	9	1	2	10	...	4	...	712
4. Cincinnati (Ohio): In-door and out-door relief given	83	1,513	24	5	747	27	...	1	...	...	...	...	5	...	722
Columbus, Franklin Infirmary, Nov. 30th, 1851	14	42	5	2	21	3	...	...	...	...	...	...	1	...	377
Total	1,666	28,690	661	46	4,307	278	10	14	7	5	10	...	14	...	9,335
Total Population in the above States	151,995	565,933	37,035	22,611	339,022	24,480	872	1,276	1,602	635	3,628	447 less than	5,123	...	6,441,454
Proportion of Paupers in 100,000 inhabitants	1,096	5,069	1,755	203	1,270	1,136	1,147	1,097	436	787	276	224	273	...	145

TABLE E.

Shewing the Parentage of the Children received into the House of Refuge, New York, in different Years, from 1835 to 1852 inclusive.

The Numbers at the head of the Columns indicate the same Countries as in Table D 1.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	Returned after having been Indentured.
1852.....	21	157	8	....	24	7	....	3	1	....	....	....	....	....	45	59 out of 352
1851.....	21	163	4	....	29	4	....	....	....	....	....	....	....	....	53	97 "
1850.....	26	195	9	....	....	5	....	....	....	....	....	....	....	....	65	91 "
1849.....	14	134	6	1	16	5	2	....	....	....	....	....	....	....	69	37 "
1848.....	12	127	7	4	16	2	....	....	1	....	....	....	....	....	39	34 "
1847.....	12	91	7	....	15	6	....	1	....	....	....	....	....	....	50	40 "
1846.....	16	82	12	....	13	6	....	....	....	....	....	....	....	....	38	55 "
1845.....	21	92	5	2	16	2	....	....	....	....	....	....	....	....	55	50 "
1844.....	22	88	5	....	14	1	....	....	....	....	....	....	....	....	47	46 "
1843.....	22	92	5	....	2	1	....	....	....	....	....	....	....	....	47	27 "
1842.....	29	104	9	1	7	6	....	....	....	....	....	....	....	....	59	23 "
1841.....	18	91	6	1	8	2	1	....	....	....	....	....	....	....	67	32 "
1840.....	19	83	4	2	2	3	....	....	....	....	....	....	....	....	40	10 "
1839.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
1838.....	16	62	2	1	10	4	1	....	....	....	....	....	....	....	47	18 "
1837.....	26	53	5	....	9	2	2	....	....	....	....	....	....	....	59	25 "
1836.....	22	70	1	....	7	2	....	....	....	....	....	....	....	....	52	23 "
1835.....	18	60	2	....	8	1	....	2	....	....	....	....	....	....	71	13 "
1834.....	25	68	4	2	....	4	1	....	1	....	3	....	....	....	78	19 "
Total of children....	360	1,912	101	14	196	63	7	6	3	....	3	....	....	....	981	699 "
Total pop. of the States	84,820	343,111	23,418	7,582	120,777	12,515	655	833	1,182	491	2,917	392	1,850	2,388	830	1 : 7 nearly.
Number of children in 100,000 inha- bitants	424	530	431	185	162	503	1,069	720	254	less than 249	103	less than 255	less than 54	....	41	

Note.—In this list the natives of British North America have been placed among those of the United Kingdom according to descent. Where no prisoners were found on the list, a unit (1) was supposed, and the proportion for 100,000 written down as less than the quotient.

It will be observed, that, of the children admitted to the House of Refuge a large number are returned on their hands after having been given up to their friends or indentured; no less than 699 out of 4,846, or nearly one-seventh. There is, however, another establishment in New York under the superintendence of a Dr. Russ, which has only been in operation a few months, and which is said to be completely successful. The Doctor's method consists in treating the whole of the children as members of his own family. He and his wife and daughter spend their time entirely among them. There is no beating, and hardly any correction. I was told he had reclaimed the most hardened little ruffians.

NOTE ON TABLE D 1.

Thinking the results obtained in this table uncertain, owing to the smallness of the numbers, I made use of a further list of state prisoners in the state of New York for 1851 and 1852, which raised the proportion for Switzerland considerably. However, combining this result with those obtained from the state of Pennsylvania (D 2) and those from the House of Refuge (Table E,) the ratio nearly returned to its original state in Table D 1, as will be seen by the following comparison:—

Table showing the Numbers of State Prisoners, Inmates of Houses of Refuge, and Paupers, to 100,000 Inhabitants, arranged in the order of their Magnitude.

D 1.		E.	
Native American.....	23	Native American	41
Norway .....	...	Switzerland	54 —
Holland	25 —	Holland	103
Switzerland	25	Norway .....	...
Wales	30	Germany	162
Germany	67	Wales	185
France	76	Belgium	249 —
Ireland.....	95	Denmark and Sweden....	254
Scotland	95	England	424
England	110	Scotland	431
Belgium	113	France	503
Spain and Portugal.....	135	Ireland.....	530
British North America ...	150	Italy.....	720
Italy.....	270	Spain and Portugal.....	1,069
Denmark and Sweden ...	285		

Combined Result.		D 3. Paupers.	
Native American.....	37	Native American	145
Wales	63	Wales	203
Switzerland	73	Norway	224 —
Holland	98	Switzerland	273
Norway	99 —	Holland	276
Germany	109	Denmark and Sweden....	436
Belgium	199	Belgium	787
France	201	England	1,096
England	210	Italy	1,097
Scotland	219	France	1,136
Ireland	236	Spain and Portugal.....	1,147
Spain and Portugal	345	Germany	1,270
Italy	428	Scotland	1,785
Denmark and Sweden....	827	Ireland.....	5,069

There are no Norwegians in any of these lists. Where any number has been inserted opposite the name of that country it has been obtained by supposing a unit and dividing by the total population, placing the sign — after the result to show it merely indicates that the actual number was something below the sum there given.

On the Causes of the Fluctuations in the Herring Fishery.

By JOHN CLEGHORN, ESQ.

[Read before the Statistical Section of the British Association for the Advancement of Science at Liverpool, on the 26th of September, 1854.]

THE Herring Trade is so important a branch of national industry, and is characterized by fluctuations so ruinous to those engaged in it, that it appears to me any facts that may throw light on its changes would interest the association and tend to the more successful prosecution of the fishing.

Popularly little is known of the natural history of the herring, and to this cause is to be imputed the uncertainty and loss that is so prominent a feature in its history. As specimens of the jumble of uncertainty that characterises the popular opinions on this important department of the subject, I beg to submit the following:—

To account for the disappearance of the herring from some of the islands on the west coast, the Secretary of the Commissioners for the British Herring Fishery says, in his report for 1844, p. 7, "That the only rational manner in which this phenomenon can be accounted for is, by supposing that it may have arisen from the cutting of the sea-weed for the manufacture of kelp on the shores of the bays and inlets where the fish came regularly from the neighbouring deeps for the purpose of spawning, which thus deprived the ova of the means of attachment and protection." In the report for 1848, the Commissioners say, "All fishings are fluctuating in their character, and liable to alternate diminution and increase; the deficiency alluded to can excite but little surprise." In the "*North British Daily Mail*," a Wick correspondent writes, as follows, in July last. "There are still no herrings worth speaking of. We are nearly 8,000 crans short of last year. It is worth remarking, that in 1834, twenty years ago, our fishing was a complete failure, and that the preceding year's catch was more abundant than any that went before it. Last year our fishing exceeded all preceding years, and now it looks as if this season were to be a counterpart of 1834. Have we in these twenty years seen a cycle in the natural history of the herring? We know they visit our coast for food fitted to enable them to mature their milt and roe. Is the food of the herring this year deficient? It looks like it.

Mr. Hogarth has the salmon fishing at Castlehill, on the Pentland Firth, and was there in his yacht about a month ago. Mr. Stewart, the factor there, was on board, and Mr. Hogarth said to him, I can see, from the state of these salmon there, that we will have a poor fishing this year.—*Mr. Stewart*. Why think you so?—*Mr. Hogarth*. I see they have been hungered. The salmon fishing has turned out just as Mr. Hogarth predicted. In the natural history of the salmon and the herring there are many points of analogy.

At present Wick is the chief seat of the herring fishery. "This season there were 920 boats engaged in the fishing here, and the produce has been," says the "*John O'Groat Journal*," "95,680 crans," or barrels. On comparing this with that of 1825 we are 14,000 barrels short, and, as compared with 1830, we are 57,000 barrels less. It is the smallest fishing since 1840, and it is 61,000 barrels short of last year. Various surmises are afloat as to the cause of this

deficiency, but the generally received opinion is, that the whole falling off is owing to two rough nights, on which the boats did not put to sea while great shoals of herrings were on the coast. That this is an erroneous or very partial view of the matter, I infer, because at all the stations between Nosshead and Cape Wrath the fishing has been a complete failure, and the same may be said of Orkney and Shetland, while for the whole of Scotland the shortcoming is, perhaps, one-third of last year.

The cause, then, is general, and to arrive at correct conclusions as to this cause we must, I apprehend, make ourselves acquainted with the "life and conversation," as Gilbert White says, of the herring. Without entering into the minutiae of their lives, I would notice that in his "Natural History of Selborne," White says, "The two great motives which regulate the proceedings of the brute creation are love and hunger—the one incites them to perpetuate their kind, the latter induces them to preserve individuals." In obedience to those laws the herring congregates on our coasts, for there only they find food fitted to mature their milt and roe, and a sea bottom appropriate for receiving their spawn, consequently they are brought within the scope of those agents employed for their capture. Let us see what those agents are. 10,974 boats, 41,045 sailors employing 81,934,330 square yards of netting, an extent of netting that would cover an area of $26\frac{1}{2}$ square miles; and if the nets were extended lineally they would reach a distance of 4,741 miles.

May we not have drawn over liberally on our shoals of herring? With such appliances may we not have overfished the sea? That a river or lake may be overfished, or that the whales between the tropics and at the poles may have their numbers so thinned that the fishing would cease to pay, will be readily conceded; but nobody here ever dreams of imputing the failures in the herring fishing to our having overdone it. The Commissioners for the British fisheries, in their Report for 1850, hint that overfishing has told on the cod and ling, for they say at page 3, "By the statements of the fishermen generally, it appears that the boats are almost everywhere obliged to go further from the land than formerly before they find fish; and hence it is assumed either that the fish have changed their runs on account of the fishing that has been carried on, or that the fishing grounds near the shore have been overfished. Of this there is no doubt that much longer voyages are now undertaken in connection with the cod fishing. Expeditions of smacks and other vessels to Davis Straits to fish cod have, in recent years, been established with varied success. An attempt to increase the supplies of fish has been set on foot in another direction. Two English smacks made different trips to Iceland, landing their fish, as they brought them home, at Stornoway, in Lewis."

The truth is, the cod and ling fishing in the German Ocean is now not worth the prosecuting. Is it true that a river or a lake may be overfished, that we may extirpate the whole or so thin their numbers, that they may not be worth seeking, that even the cod and ling may be considered rare fish in their old haunts, and yet with our 81,934,330 square yards of netting make no sensible impression on the shoals of herrings? Let us see what has happened.

At the beginning of the present century the chief seats of the herring fishing were on the west coast. "Half a century ago," say the Commissioners, "the hopes of those engaged in the national fisheries seemed to be confined to the Firth of Forth and the lochs of the west coast of Scotland." The west coast waters were fished till fishing them ceased to pay.

From inquiries I have made into the statistics of the herring fishing on the west coast stations and those on the east coast that have been long fished, they present a steady progression in the quantities of herring caught up to a culminating point, then violent perturbations and final extinction as curing districts. Other waters are tried and found to pay—the same scenes are again enacted and with like results. The periods through which these changes move are varied by local causes. An extensive and sheltered seaboard, sheltered from violent tides, fitted for the resort of the herring, and with few stations fitted for the reception of boats, protracts the period towards extinction, while extensive accommodation for boats shortens the period. The conservative agencies at work are storms, and the strict observance of Sunday during the fishing season, the boats not going to sea on Saturday or Sunday nights, for then a portion, at least, of the shoals have time to deposit their spawn.

The British Association, by directing attention to the British herring fishery, will lend important assistance towards the saving of our fishing and the making it a perennial source of wealth to the nation.

On the Loans raised by Mr. Pitt during the First French War, 1793-1801; with some statements in defence of the Methods of Funding employed. By WILLIAM NEWMARCH, ESQ., one of the Honorary Secretaries of the Statistical Society.

[Read before the Statistical Society, on Monday, the 19th of February, 1855.]

APPENDIX.

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| <p>A.—Loans raised by Mr. Pitt, 1793-1801.—Capitals Funded in the several kinds of Stock.</p> <p>B.—Loans raised by Mr. Pitt, 1793-1801.—Quantity of Stock given for every 100<i>l.</i> Money.—Market Prices of Stock at the time of the Loan.</p> <p>C.—Loans raised by Mr. Pitt, 1793-1801.—Amount of the Annual Interest on each Loan.</p> <p>D.—Income of the United Kingdom 1792-1802; and also for 1815, 1825, and 1852.</p> <p>E.—Expenditure of the United Kingdom—same years.</p> <p>F.—Net Revenue of Great Britain at seven dates, between 1712 and 1789.</p> <p>G.—Imports and Exports.—Great Britain.—Official Values.—Period of American War 1777-83.—Peace 1784-92.—First French War 1793-1802.</p> <p>H.—Corn.—Prices and Importations during the Three Decennial Periods 1761-70, 1771-80, and 1781-90; and for each year 1791-1802.</p> <p>I.—Subsidies to Foreign States 1793-1801.</p> <p>J.—Terms of the Loans raised by France 1815-48.</p> <p>K.—Mr. Pitt's Budgets 1793-1801.—Abstract of New Taxes Imposed, with the estimated produce when proposed to Parliament.</p> | <p>L.—Motions made in Parliament for Peace, December 1792 to May 1797.</p> <p>M.—Market Prices of Stocks, Long Annuities, and of Scrip, and Omnium, in each month, from January 1791 to December 1800, with columns of the Equated Prices.</p> <p>N.—Detailed Computations of the effect produced in a period of years by the Difference of terms between Loans contracted in Low Rate and High Rate Stocks.</p> <p>O.—Similar Computations as regards the Loan of 8,000,000<i>l.</i>, of March 1847.</p> <p>P.—Statement in Detail of the Terms of the several Loans 1793-1801, as given by Mr. Grellier in the Third Edition (1812) of his work on the subject.</p> <p>Q.—General View of all the Loans raised during the entire Period of the War, or from 1793 to 1806; and computations as to the General Comparative effect of raising the Extra Expenditure by Loans, or by Supplies within the Year.</p> <p>R.—General Observations on the Contents of some of the Appendices.</p> |
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B.—LOANS raised by MR. PITT, 1793-1801.—QUANTITY OF STOCK given for

Sum Actually Raised in Money.	Loans.		For every £100 Money advanced, the Contract gave Stock and Long Annuity as follows—				
			3 per Cts.	4 per Cts.	5 per Cts.	Long Annuity.	Total Rate Paid.
£			Stock	Stock.	Stock.	£ s. d.	£ s. d.
4,500	1793.	Loan .....(11 Mch.)	138 8	....	....	....	4 3 4
11,000	1794.	Loan .....(5 Feb.)	100·	25·	....	. 11 5 for 66·25 yrs.	4 11 5
1,907	„	Navy Bills .....(April)	....	....	101	....	5 1 .
18,000	1795.	Loan .....(23 Feb.)	100·	33·3	....	. 9 6 for 65·25 yrs.	4 16 2
1,490	„	Navy & Vict ^s....(Ap.l)	....	....	108	....	5 8 .
18,000	„	Loan .....(7 Dec.)	145·	....	....	. 6 6 for 64·25 yrs.	4 13 6
4,600	„	<i>Imperial Loan</i> (28 May)	83·3	....	....	5 . . for 25 yrs.	7 10 .
7,500	1796.	Loan .....(May)	145·	....	....	. 5 6 for 63·75 yrs.	4 12 6
4,226	„	Navy & Vict ^s (May)	....	....	104	....	5 4 7
13 029	„	Navy & Exch.....(Nov.)	176·	138·	118	....	5 7 11
18,000	„	<i>Loyalty Loan</i> ... (1 Dec.)	....	....	112·5	....	5 12 6
13,000	1797.	Engl. & Irish Loan (2 Apl.)	175·	20·	....	. 6 . for 62·75 yrs.	6 7 .
1,500							
1,620	„	<i>Imperial Loan</i> .. (29 Apl.)	226·5	....	....	....	6 15 6
15,000	1798.	Engl. & Irish Loan (1 May)	200·	....	....	. 4 11 for 61·75 yrs.	6 4 11
2,000							
3,000	„	Loan .....(Dec.)	187·5	....	....	....	5 12 5
12,500	1799.	Engl. & Irish Loan (7 June)	175·	....	....	....	5 5 .
3,000							
18,500	1800.	Engl. & Irish Loan (1 Mch.)	157·	....	....	....	4 14 2
2,000							
25,500	1801.	Engl. & Irish Loan (17 Feb.)	175·75	....	....	....	5 5 5
2,500							
202,372							5 5 9

every £100 Money.—Market Prices of Stock at the time of the Loan.

Actual MARKET PRICES at time of Contract.				Rates Fielded by Actual Market Prices.			
3 per Cents.	4 per Cents.	5 per Cents.	Long Annuity.	3 per Cents.	4 per Cents.	5 per Cents.	Long Annuity.
£	£	£	Years Purchase.	£ s. d.	£ s. d.	£ s. d.	£ s.
77	89	104	21½	3 18 2	4 9 3	4 16 2	4 10
67	84	101	20	4 9 6	4 15 3	4 19	4 15
68	85	106	20½	4 8 2	4 14 1	4 14 4	4 13
62	79	95	18½	4 16 9	5 1 3	5 5 3	5 4
62	78	95	18½	4 16 9	5 2 7	5 5 3	5 4
65	83	102	19½	4 12 3	4 16 5	4 18	4 15
65	79	97	18½	4 12 3	5 1 3	5 3 1	5 4
65	81	97	18	4 12 3	4 18 9	5 3 1	5 8
65	81	97	18	4 12 3	4 18 9	5 3 1	5 8
56	72	86	16	5 7	5 11 1	5 16 3	6 2
57	73	86	16	5 5 3	5 9 7	5 16 3	6 2
48	60	74	14	6 5	6 13 4	6 15 1	7 .
48	60	74	14	6 5	6 13 4	6 15 1	7 .
48	58	71	13	6 5	6 17 11	7 10	7 12
54	66	80	15	5 11 1	6 1 3	6 5	6 10
60	74	88	17	5	5 8 1	5 13 7	5 14
62	81	94	18½	4 16 9	4 18 9	5 6 5	5 3
57	77	91	17½	5 5 3	5 3 11	5 9 11	5 10

°C.—LOANS raised by Mr. PITT, 1793-1801.—Amount of the ANNUAL INTEREST on each Loan.

Amounts of Annual Interest on Capitals Funded.										
Sum actually Raised.	Loans.	3 per Cents.	4 per Cents.	5 per Cents.	Long Annuity.		Manage- ment at £450 per Mil.	Total Annual Charge.	Equal, exch- ange of Manage- ment to an In- terest of per Cent. per Ann.	
					Years.	£				
£ 4,500	1793. Loan .. (11 March)	£ 187,500	£ ...	£ ...	...	£ ...	£ 2,812	£ 190,312	£ s. d. 4 3 4
11,000	1794. Loan .. (5 Feb.)	330,000	110,000	...	66½	62,792	6,894	509,687	4 11 5	
1,907	" Navy Bills .. (April)	...	...	96,000	...	...	867	97,193	5 1 .
18,000	1795. Loan .. (23 Feb.)	540,000	240,000	...	65½	85,500	11,762	872,262	4 16 2	
1,490	" Navy & Vict's. Bills .. (April)	...	...	80,495	...	...	724	81,219	5 8
18,000	Loan .. (7 Dec.)	783,000	...	...	64½	58,500	12,401	854,000	4 13 6
4,600	" Imperial Loan .. (28 May)	115,000	...	...	25	230,000	4,312	349,312	7 10
7,500	1796. Loan .. (May)	324,000	...	...	63¾	20,500	5,100	349,000	4 12 6
4,226	" Navy & Vict's. .. (May)	...	...	221,000	...	...	2,000	223,000	5 4 7
13,029	" Navy & Exch. .. (Nov.)	553,000	35,000	115,000	...	...	10,000	713,000	5 7 11
18,000	" Loyalty Loan .. (Dec.)	...	...	1,006,000	...	...	9,000	1,015,000	5 12 6
13,000	1797. Engl. & Irish Loan .. (26 April)	761,000	116,000	...	62¾	43,000	13,000	934,000	6 7 .	
1,500	" Imperial Loan .. (April)	110,000	...	...	...	...	1,600	112,000	6 15 6
15,000	1798. Engl. & Irish Loan .. (1 May)	1,020,000	...	...	61¾	42,000	15,000	1,077,000	6 4 11
2,000	" Loan .. (Dec.)	168,000	...	...	...	...	2,530	171,000	5 12 5
3,000	"	...	...	...	...	...	...	...	...
12,500	1799. Engl. & Irish Loan .. (7 June)	813,000	...	...	...	...	12,200	826,000	5 5 .
3,000	"	...	...	...	...	...	...	...	...
18,500	1800. Engl. & Irish Loan .. (10 March)	966,000	...	...	...	...	14,483	980,000	4 14 2
2,000	"	...	...	...	...	...	...	...	...
25,500	1801. Engl. & Irish Loan .. (17 Feb)	1,476,000	...	...	...	...	22,144	1,498,000	5 5 5
2,500	"	...	...	...	...	...	...	...	...
202,372		8,146,000	501,000	1,518,495	L.A.	311,792	146,927	10,851,000	5 5 9	

These Three Tables, A, B, and C will, it is believed, give a clear insight into the nature and terms of the funding operations of 1793 to 1801.

The materials of the Tables have been chiefly obtained from Dr. Hamilton, but the precise dates, quotations of prices, rates of interest, &c., have been obtained from original sources.

It will be seen that, throughout these Tables, except in Table C, I have not pretended to give precise figures below the thousandth or third digit from the unit end: in other words, I have considered myself at full liberty to dispense generally with the first three unit figures, in order to secure more space and greater lucidity in the arrangement of the numerous columns.

For the purposes of a general scientific inquiry like the present, it seems to me that an approach to accuracy of the nature now described is every way adequate. The case would be different if the object in view was not to reason on general results, but to balance a statement of account for the purposes of audit.

I also avail myself of this opportunity of saying that the same principle of discarding the three, and sometimes the four unit figures, has been followed throughout all the Tables of this Appendix.

As already mentioned at page 7 *ante*, all the Long Annuities quoted in these Three tables, A, B, and C, expire on 5th January, 1860. The annuity of 5*l.* granted in connexion with the Imperial Loan of 1795 was for 25 years only. The amount, therefore, of Long Annuity, granted from 1793 to 1801, was only 311,792*l.* per annum, equal, at say an average price of 18 years' purchase, to a capital of 5,612,000*l.*

In the statements generally given of the Loans raised during the whole of the First French War, 1st February, 1793, to the Peace of Amiens, 17th March, 1802, it is usual to include the 8,910,450*l.* of Exchequer Bills funded in November, 1801—at an average rate of interest equal to 5*l.* 5*s.* 9*d.*;—and also the loan of March, 1802, of 25,000,000*l.* (*viz.*, 23 millions for England, and 2 millions for Ireland), raised at an average rate of 3*l.* 19*s.* 2*d.* These two operations, however, do not fall properly under the category of the Loans, of which the present Paper professes to treat, and hence their omission in the preceding Table. In Appendix Q (page 64 *seq.*) a general view will be found of all the Loans of the whole period from 1792 to 1816.

D.—Income of the United Kingdom, 1792-1802; and also for 1815, 1825, and 1852.

1815.	1825.	1852.	United Kingdom.—Income, &c.	1792.	1793.	1794.	1795.	1796.	1797.	1798.	1799.	1800.	1801.	1802.
10-52	16-54	20-55	Customs	4-00	3-95	3-57	3-51	3-59	3-86	5-57	7-31	6-78	6-40	6-07
26-54	21-00	14-83	Excise	8-73	8-36	8-77	9-58	9-59	10-60	11-32	12-30	10-84	10-96	14-64
6-34	5-00	3-37	Assessed and Land Taxes	2-82	2-90	2-92	3-01	3-32	3-50	4-74	6-11	5-14	3-84	4-60
15-28	...	5-51	Income and Property Tax .....	...	...	...	...	...	...	82	2-67	4-90	6-01	3-47
6-37	7-45	6-76	Stamps	1-46	1-40	1-49	1-54	1-68	1-97	2-23	2-58	2-77	3-05	3-19
1-62	1-60	1-02	Post Office	37	42	46	42	53	60	69	73	74	84	97
52	45	1-13	Pensions, Offices, Hawkers, Coaches, { Miscellaneous, Lottery	56	1-12	43	49	74	35	1-00	50	75	74	38
67-20	52-06	53-21	GREAT BRITAIN	17-96	17-44	17-65	18-56	19-45	20-88	26-38	32-20	30-91	31-75	33-34
4-70	...	...	IRELAND	94	86	1-03	1-09	1-32	1-22	1-55	2-33	2-16	1-97	2-80
71-90	52 06	53-21	Raised by Taxation	18-90	18-30	18-68	19-65	20-77	22-10	27-93	34-53	33-07	33-72	36-14
40-00	...	...	Loans Raised .....	...	4 67	11-56	27-85	24-08	30-66	18-26	20-08	22-85	30-61	27-55
11-13	4-51	...	Exch., and other Bills Funded .....	...	...	1-91	1-49	15-82	1-43	...	...	...	5-94	...
3	6	...	Contribution East India Company	30	25	25	...	25	50	...	...	...	...	...
51-16	4-51	...	Raised by Loans, &c.	30	4-92	13-72	29-34	40-15	32-59	18-26	20-08	22-85	36-55	27-55
123-06	56-63	53-21	TOTAL RECEIPTS	19-20	23-22	32-40	49-00	60-92	54-69	46-19	54-61	55-92	70-27	63-69
46-96	29-72	17-74	Exch., and other Bills Issued	8-10	11-42	8-54	15-00	8-03	12-52	13-85	32-05	26-48	24-43	17-10
15-30	9-55	8-38	Balance at commencement of year	4-54	3-94	4-47	3-92	5-85	7-38	10-12	6-89	8-58	8-94	9-02

E.—EXPENDITURE, *United Kingdom, 1792-1802; and also for 1815, 1825, and 1852.*

1815.	1825.	1852.	United Kingdom.—Expenditure.	1792.	1793.	1794.	1795.	1796.	1797.	1798.	1799.	1800.	1801.	1802.
28-38	30-03	27-53	{ Funded Debt, Interest and Manage- ment	9-42	9 09	9-53	10-37	11-52	13-79	15-86	16-33	16-71	18-21	19-07
1-23	1-06	{ 2-55 {	Civil List	1-10	1-18	1-03	1-17	1-14	1-12	1-14	1-15	1-14	1-14	1-14
85	1-17		Pensions, Salaries, &c.	23	28	30	30	40	33	34	48	49	67	62
30-50	32-26	30-08	Consolidated Fund	10-75	10-56	10-86	11-84	13-06	15-24	17-34	17-96	18-34	20-03	20-83
35-32	7-58	7-02	Army	2-51	5-71	10-86	18-03	16-55	18-50	15-59	19-44	19-31	17-75	11-83
16-07	5-85	6-63	Navy	2-75	3-41	3-22	9-53	7-69	12-41	12-29	13-21	14-72	17-26	12-03
3-25	1-57	2-50	Ordnance	46	1-14	1-54	2-11	3-15	2-29	2-14	2-52	2-10	2-20	1-14
3-87	2-21	4-17	Miscellaneous	65	84	90	88	1-02	1-60	1-17	1-15	1-37	1-74	2-92
3-10	82	40	Interest on Exchequer Bills	32	32	31	40	26	42	1-68	83	60	1-64	69
61-61	18-03	20-72	Supply Votes	6-69	11-42	16-83	30-95	28-67	35-22	32-87	37-15	38-10	40-59	28-61
5	...	...	Subsidies .....	...	2-20	...	5-43	8	...	64	26	1	...	...
14-15	5-49	...	Sinking Fund, Reduction of Debt	1-46	1-63	1-87	2-14	2-70	3-39	4-10	4-53	4-91	5-53	6-11
14	...	...	{ Discount on Loans for prompt pay- ment .....	...	...	6	19	34	25	26	24	36	69	8
14-34	5-49	...	Special Votes	1-46	3-83	1-93	7-76	3-12	3-64	5-00	5-03	5-28	6-22	6-19
106-45	55-78	50-80	TOTAL EXPENDITURE	18-90	25-81	29-62	50-55	44-85	54-10	55-21	60-14	61-72	66-84	55-63

These Tables D and E of the Revenue and Expenditure, from 1792 to 1802, have been compiled from the materials given by Mr. Marshall, in that monument of industry and skill, his quarto book of tables. The figures have been taken from the statement, No. 11 of his Second Part. Previous to the year 1800, there were considerable discrepancies in most general statements relating to finance, and while there is every reason to believe that the figures given in these tables (D and E), are substantially correct, it is quite possible that they may differ in some respects from similar returns to be found in other works of reputation. It was not the least of Mr. Pitt's administrative reforms that he put an end in a great measure to confused statements of public documents by introducing a greatly improved system of statistical records.

It may be added that the Votes of men for the Navy were 45,000 for 1793; 85,000 for 1794; 100,000 for 1795; 110,000 for 1796; and 120,000 for 1797-8-9, and 1800.

It is not easy to state with equal clearness the number of Land Forces. The votes for Militia and Fencible Corps were in

	£		£
1793	250,000	1797	1,972,000
1794	1,240,000	1798	3,798,000
1795	1,631,000	1799	4,532,000
1796	1,820,000		

F.—Revenue of Great Britain.—*Net Payments into the Exchequer in the Years as under.*

Years.	Customs.	Excise.	Stamps.	TOTAL.
	£	£	£	£
1712. Peace of Utrecht	1,315	1,650	93,000	3,043
1740. Spanish War	1,302	2,580	117,000	3,997
1756. { Commencement of Seven Years' War	1,670	3,351	129,000	5,150
1762. End of ditto.	1,854	4,592	265,000	6,711
1774. Commencement of American War	2,567	4,570	not given	7,137
1784. End of ditto.	3,326	5,584	„	12,995
1789. Peace	3,164	6,861	„	15,460

These figures are compiled mainly from statements given by Sir John Sinclair's (*Hist. Pub. Rev.*, II., 165). They are inserted as convenient indications of the amount of the Revenue in the earlier periods of last century. In the above table the 000's are omitted in the cols. Customs, Excise, and Total; but in the col. Stamps the 93,000 includes the 000's at the unit end.

G.—IMPORTS AND EXPORTS.—*Great Britain.*—Official Values.—*Period of the American War, 1777-83.—Period of Peace 1784-92.—First French War 1793 to 1801.*

Imports.				Exports.		
From India and China.	From all other Parts.	TOTAL.		TOTAL.	British Produce and Manufactures.	Foreign Merchandize.
£	£	£		£	£	£
1·36	10·32	11·70	1777-79 (3 yrs.)	13·10	8·40	4·71
1·35	10·40	11·77	1780-83 (4 „)	13·12	9·00	4·13
3·15	13·48	16·63	1784-88 (5 „)	16·50	13·00	4·60
2·65	16·44	19·07	1789-92 (4 „)	21·77	16·00	5·77
3·50	15·76	19·26	1793	20·39	13·90	6·49
4·46	17·83	22·29	1794	26·75	16·72	10·03
5·76	16·97	22·73	4795	27·31	16·52	11·78
3·37	19·80	23·18	1796	30·42	19·10	11·32
3·94	17·07	21·01	1797	28·91	16·90	12·01
4·21	17·50	25·70	(1793-97)	26·76	16·63	10·32
7·62	18·03	25·65	1798	33·80	20·00	13·80
4·28	22·56	26·84	1799	36·00	24·00	12·00
4·94	25·63	30·57	1800	43·15	24·30	18·85
6·59	26·20	32·79	1801	46·90	25·70	21·20
5·86	23·10	28·96	(1798-1801)	39·96	23·50	16·46

These figures are compiled mainly from the Commons' Report on the Outstanding Demands on the Bank of England, March, 1797 ; and from the Annual Register for 1799, (p. 189).

It will be seen that the figures give the Official Value only, that is the value as ascertained, according to a Custom House scale of prices fixed in 1697, and, therefore, entirely obsolete. Some approximation to the *Real* value was obtained by the declarations made by merchants under the Convoy Act of 1797, for the years 1798 to 1800 ; those declarations give the following result, viz.,

EXPORTS.—REAL VALUE.—*Declarations under Convoy Act of 1797.*

Year.	British Merchandize.	Foreign Merchandize.	Total.
	£	£	£
1798	33·15	not given.	not given.
1799	38·94	11·35	50·29
1800	39·47	16·36	55·83

These results do not materially differ in the totals from a calculation of real value made at the Custom House by Mr. Irving, the Inspector, and which was as follows :—

Year.	British Merchandize.	Foreign Merchandize.	Total.
	£	£	£
1799.....	40·08	8·91	48·99
1800.....	45·57	9·82	55·40

Mr. Rose, however, in his pamphlet ("Brief Examination," &c.), and it was almost an official paper, gives, perhaps, the best statement now obtainable of the *real* value of the exports and imports between 1789 and 1805. It is to be borne in mind, however, that the public returns of the Custom House only began to be settled into anything like accurate form until after the year 1800, and then mainly in pursuance of reforms of detail introduced by Mr. Pitt, who had felt most painfully in working out his fiscal plans, the absence of an adequate body of public statistics. Mr. Rose's table is as follows :—

Statement of the Average Annual Real Value of Imports and Exports. Great Britain, during Periods of Five Years 1789-92, 1795-98, 1802-05, as given in Mr. Rose's pamphlet of 1806.

Periods.	Exports.—Real Value of			Real Value of Imports into Great Britain.
	British Goods.	Foreign and Colonial Goods.	Total.	
	£	£	£	£
1789-92 (4 yrs.)	27,135,000	7,770,000	34,905,000	37,784,000
1795-98 (4 ,,)	30,648	12,393	43,042	42,261
1802-05 (4 ,,)	42,505	14,106	56,611	53,240

H.—CORN.—PRICES and IMPORTATIONS, &c., during the Three Decennial Periods, 1761-70, 1771-80, 1781-90.

Periods.	Average Price of Wheat.	Wheat. Average Annual Excess of		Barley and Malt. Average Annual Excess of	
		Exports.	Imports.	Exports.	Imports.
	£ s. d.	Qrs.	Qrs.	Qrs.	Qrs.
1761-70....	2 2 .	106,000	....	177,000	....
1771-80....	2 5 10	....	29,000	32,000	....
1781-90....	2 8 .	....	64,000	96,000	....

Note.—In these thirty years there were only *four* years during which the annual average price was materially above the low average of the whole period, viz., 1765, 1767; '68; '70.

CORN.—PRICES and IMPORTATIONS during each of the Thirteen Years 1791-1803, with the Amount of BOUNTY PAID on Corn Imported.

Years.	Average Annual Price per Imperial Quarter of Wheat.	Estimated for Home Consumption.			Estimated Import Cost.	Bounties Paid for Corn Imported.
		Wheat Flour.	All other Kinds.	Total.		
	£ s. d.	Qrs.	Qrs.	Qrs.	£	£
1791	2 8 7	222,000	842,000	1,064,000	1,596,000	....
1792	2 3 0	470,	918,	1,388,	1,735,	....
1793	2 9 3	22,	1,189,	1,211,	1,211,	....
1794	2 12 3	490,	973,	1,463,	2,194,	....
1795	3 15 2	328,	1,149,	1,477,	2,954,	....
1791 to 1795}	2 13 8	306,000	1,012,000	1,321,000	1,940,000	
1796	3 18 7	313,000	557,000	870,000	2,610,000	574,000
1797	2 13 9	880,	1,100,	1,980,	3,960,	28,
1798	2 11 10	461,	717,	1,178,	2,356,	1,
1799	3 9 0	396,	932,	1,328,	3,320,	....
1800	5 13 10	463,	585,	1,048,	4,192,	45,
1796 to 1800}	3 13 5	503,000	780,000	1,281,000	3,288,000	130,000
1801	5 19 6	1,264,000	874,000	2,138,000	10,690,000	1,420,000
1802	3 9 10	1,424,	982,	2,406,	6,015,	715,
1803	2 18 10	647,	636,	1,283,	2,566,	44,
1801 to 1803}	4 2 8	1,112,000	838,000	1,942,000	6,212,000	726,000

The figures given in the preceding page are for the ordinary *Calendar Year* of January to December; and, as regards the prices of wheat, therefore, do not indicate the real effect produced on the markets by the character and results of each harvest. In order to render this important point as distinct as possible, I insert the following table of the monthly average price of wheat in England, arranging the months in *Harvest Years*, or from September in one year to August of the next, so as to include in each column the prices affected mainly by only one harvest. The quotations are for the Winchester eight-bushel quarter; and as 1 Imperial quarter = 1.0315 Winchester quarters, the corresponding quotations, if given for *Imperial* quarters, would be, say sevenpence in the pound, *higher* than the figures in the table. The table has been compiled from a return given by Mr. Tooke (*Hist. Prices*, ii. 390).—The average prices of the different months should be referred to in connexion with the information contained in the other divisions of the Appendix.

MONTHLY AVERAGE PRICES of *Wheat* (per Winchester Eight-Bushel Quarter) in England, arranged in HARVEST YEARS of 1st September to 1st September, from 1st January, 1793, to 1st September, 1802.

Harvest Year.	1793.	'93.'4.	'94.'5.	'95.'6.	'96.'7.	'97.'8.	'98.'9.	'99-1800.	1800-'01.	1801-'2.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Sept. ....	...	2 8 9	2 11 6	3 19 .	3 4 5	2 18 10	2 10 .	3 15 5	5 5 10	4 10 4
Oct. ....	...	2 7 .	2 11 .	3 16 9	3 1 3	3 . 2	2 8 7	4 3 6	5 6 6	3 17 5
Nov. ....	...	2 7 2	2 12 10	4 3 9	2 19 9	2 16 4	2 7 11	4 9 9	6 . 2	3 11 1
		2 7 8	2 11 9	3 19 10	3 1 10	2 18 5	2 8 10	4 2 11	5 10 10	3 19 7
Dec. ....	...	2 8 9	2 15 .	3 6 3	2 17 3	2 12 9	2 8 5	4 13 10	6 12 6	3 15 5
Jan.	2 7 .	2 10 1	2 16 8	4 12 .	2 15 .	2 11 2	2 9 5	4 14 8	6 18 1	3 16 5
Feb.	2 6 10	2 10 7	2 18 3	4 13 6	2 12 6	2 9 10	2 10 .	5 1 11	7 5 9	3 14 5
		2 9 10	2 16 7	4 10 7	2 14 11	2 11 3	2 9 3	4 16 10	6 18 9	3 15 5
March ...	2 7 9	2 10 10	2 19 11	5 . .	2 9 8	2 10 2	2 10 3	5 7 10	7 14 4	3 13 6
April	2 9 9	9 11 2	3 2 1	4 6 8	2 9 9	2 11 7	2 13 5	5 11 11	7 11 9	3 9 9
May	2 11 5	2 11 3	3 4 10	3 15 7	2 9 8	2 11 10	3 . 10	6 . 2	6 10 4	3 5 3
	2 9 7	2 11 1	3 2 3	4 7 5	2 9 8	2 11 2	2 14 10	5 13 4	7 5 6	3 9 6
June	2 11 2	2 11 6	3 10 1	4 2 .	2 10 .	2 11 .	3 4 .	6 5 .	6 8 11	3 7 .
July	2 11 1	2 11 11	4 4 5	4 1 .	2 10 5	2 10 9	3 6 9	6 14 10	6 15 2	3 7 4
Aug.	2 10 6	2 12 6	5 8 4	3 15 11	2 12 .	2 11 3	3 13 .	5 3 2	6 1 9	3 9 .
	2 11 .	2 11 11	4 7 7	3 19 8	2 10 10	2 11 .	3 7 11	6 1 .	6 8 7	3 7 9
		2 10 2	3 5 5	4 4 4	2 14 4	2 13 6	2 15 3	5 6 .	6 11 .	3 13 1

I.—SUBSIDIES and LOANS to FOREIGN STATES, 1793 to 1806, from *Parliamentary Paper, No. 466, of 1854, and therefore the latest Official Return on the subject.*

	£	£
1793. Hanover	492,000	
Hesse Cassel	190,	
Sardinia	150,	
	<hr/>	832,000
1794. Prussia	1,226,000	
Sardinia	200,	
Hesse Cassel	437,	
Hesse Darmstadt	102,	
Baden	25,	
Hanover	560,	
	<hr/>	2,550,000
1795. Germany, Imperial Loan (35 Geo. III. cap. 93)	4,600,000	
Baden	2,	
Brunswick	98,	
Hesse Cassel	317,	
Hesse Darmstadt	80,	
Hanover	478,	
Sardinia	150,	
	<hr/>	5,725,000
1796. Hesse Darmstadt	20,000	
Brunswick	13,	
	<hr/>	33,000
1797. Hesse Darmstadt	57,000	
Brunswick	7,	
Germany, Imperial Loan (37 Geo. III. cap. 59).....	1,620,	
	<hr/>	1,684,000
1798. Brunswick	7,000	
Portugal	120,	
	<hr/>	127,000
1799. Prince of Orange	20,000	
Hesse Darmstadt	5,	
Russia	825,	
	<hr/>	850,000
1800. Germany	1,066,000	
Germau Princes	500,	
Bavaria	501,	
Russia	546,	
	<hr/>	2,613,000
1801. Portugal	200,000	
Sardinia	40,	
Hesse Cassel	100,	
Germany	150,	
German Princes.....	200,	
	<hr/>	690,000
Total 1793 to 1801, or till the Peace of Amiens	<hr/>	£15,104,000

J.—Statement of the TERMS of the LOANS raised by FRANCE, 1815-1848.

Dates.	Sum Borrowed in £ Sterling. 25 Francs = £1.	Fund.	Negotiated at the Price per £100 Money of	Rate of Interest to Lender.
	£		Per Cent.	£ s. d.
1815 (May & June)	1,434,528	5 Per Cent.	51·23	9 15 2
1816 & 1817	2,790,520	„	57·26	8 14 8
1817.....	316,961	„	{ 59·16 average price }	8 9 0
1817 & 1818	13,802,600	„	{ 57·51 average price }	8 13 11
1818 (19 May)	7,916,376	„	66·50	7 10 4
„ (9 Oct.)	6,600,000	„	67·00	7 9 3
1821 (June).....	280,000	„	87·07	5 14 10
„ (9 Aug.).....	8,564,732	„	85·55	5 16 11
1823 (10 July)	16,559,239	„	89·55	5 11 8
1830 (12 Jan.)	3,200,000	4 Per Cent.	102·07	3 18 4
1831 (19 Apl.)	4,800,000	5 per cent.	84·00	5 19 0
„	817,556	„	100·00	5 0 0
1832 (8 Aug.)	6,000,000	4 per cent.	98·50	5 1 6
1835 (27 Aug.)	3,647,630	„	97·25	4 2 3
„ (29 Sept.)	992,704	„	97 80	4 1 10
1836 (30 Mch.)	929,463	3 per cent.	81·25	3 13 10
„ (9 July)	592,272	„	80·40	3 14 8
1837 (25 Aug.)	3,753,239	4 per cent.	100·00	4 0 0
„ (12 Dec.)	339,408	„	100·00	4 0 0
1815-37	83,337,228			6 7 3*
1841	6,000,000	3 per cent.	78·51½	3 16 6
1844	8,000,000	„	84·75	3 10 9
1847-49	10,000,000	„	{ 84·75 to 75·25 }	3 10 9 to 3 19 9
1815-49	107,337,228			5 15 7†

* Average rate of Interest at which £5,304,875 of *Rentes* were sold for £83,337,228.

† Average rate at which £6,201,000 of *rentes* were sold for £107,337,000 capital.

This statement (J) of the terms of the French Loans is introduced as an interesting collateral document. It will be seen that in spite of 5 per cent. being the prevailing description of *rente*, it was profitable towards the end of the period to negotiate the loan almost exclusively in 3 or 4 per cents.

K.—MR. PITT'S BUDGETS, 1793-1801.—NEW TAXES *Imposed, with the Estimated Produce when proposed to Parliament.*

In the following Paper I have arranged in order the principal items of Mr. Pitt's Budgets from 1793 to 1801, and I have classified as far as possible the several taxes under the general divisions of Customs, Excise, &c. A very interesting chapter might be written on the character of the taxes proposed in these successive budgets, but at present I can now do no more than present the facts.

1793 (*Four Items.*)

(*Budget introduced 11th March, 1793.*)

	£	£	£
<i>Assessed Taxes.</i> —Ten per cent. additional	90,000		
Game Duty	17,000		
	<hr/>	107,000	
<i>Stamps</i> .....Bills and Receipts		68,	
<i>Excise</i> .....British Spirits		112,	
		<hr/>	287,000

1794 (*Eight Items.*)

(*Budget introduced 5th February, 1794.*)

<i>Customs</i> ....Foreign Brandy and Rum	136,000		
Slate, Stone, & Marble carried coastwise	30,		
	<hr/>	166,000	
<i>Excise</i> .....British Spirits	107,000		
Bricks and Tiles.....	70,		
Glass, Crown and Plate	52,		
Paper	63,		
	<hr/>	292,	
<i>Stamps</i> ....Solicitors' Indentures		25,	
<i>Taxes</i> .....Extra Taxes of 1791 continued.....		430,	
		<hr/>	913,000

1795 (*Ten Items.*)

(*Budget introduced 23rd February, 1795.*)

<i>Customs</i> ....Wine Imported	500,000		
Tea	180,		
Coffee and Cocoa	40,		
Fruits, Silk, Timber, and Coals.....	187,		
	<hr/>	907,000	
<i>Excise</i> .....Home and Foreign Spirits.....	259,000		
	<hr/>	259,	
<i>Stamps</i> ....Marine Insurances	130,000		
Life Insurances	30,		
Receipt and other Stamps	68,		
	<hr/>	228,000	
<i>Post Office.</i> Limitations in franking		40,	
<i>Assessed Taxes</i>.....Hair Powder (21s. per head.)		210,	
		<hr/>	1,644,000

1796 (*Ten Items.*)*(Budget introduced 7th December, 1795)*

	£	£	£
Legacy Duty on <i>Real</i> and Personal Estate	250,000		
The proposal for the Legacy Duty on <i>Real</i> estate was defeated, and involved a reduction of	136,		
		114,000	
<i>Customs</i> Tobacco	170,000		
Wines and Sweets	600,		
Sugar, drawback repealed	180,		
		950,	
<i>Excise</i> Salt	32,000		
Hats	40,		
		72,	
<i>Assessed Taxes</i> .. 10 per cent. additional	140,000		
Horse Duty additional	116,		
Horse Duty New rates	100,		
Dogs	100,		
		456,	
			1,592,000

1797 (*Twenty-nine Items.*)*(Budget introduced 7th December, 1796, and a Supplementary Budget
26th April, 1797.)*

<i>Customs</i> Tea	240,000		
Coffee and Cocoa	30,		
Sugar	280,		
Bar Iron	43,		
Brimstone, Hemp, &c.	111,		
Coals, 5s. per chaldron	100,		
Sugar, drawbacks repealed	22,		
		826,000	
<i>Excise</i> Auctions	40,000		
Bricks	36,		
Spirits	220,		
Scots Distilleries	512,		
		808,	
<i>Stamps</i> Small Duties ..	30,000		
Additions	320,		
Conveyance Deeds	90,		
Copies of Deeds	50,		
Probates of Wills	40,		
Bills of Exchange	40,		
Advertisements	20,		
Newspaper Stamps	94,		
Allowance Certificates	15,		
Gold and Silver Plate	30,		
Fire Insurance	35,		
		764,	
<i>Post Office</i> Increased Rates		250,	
<i>Assessed Taxes</i> ... House Tax altered	290,000		
Stage Coaches ..	60,		
Horses employed in Agriculture	180,		
Watches, Clocks, &c	200,		
Male Servants ..	34,		
Pleasure Horses	24,		
		788,	
			3,436,000

1798 (*Seven Items.*)(*Budget introduced, 24th November, 1797.*)

	£	£	£
<i>Customs</i> ....Convoy Tax on Imports and Exports..	1,500,000		
Tea	111,		
	<hr/>	1,611,000	
<i>Excise</i> .....Salt		502,	
<i>Assessed Taxes</i>....Former assessments Trebled.....	4,500,000		
Armorial Bearings	150,		
	<hr/>	4,650,	
<i>Voluntary Contribution</i>		1,500,	
		<hr/>	8,263,000
[Mr. Pitt's plan for the Redemption of the Land Tax was introduced 2nd April, 1798.]			

1799.

(*Budget introduced, 3rd December, 1798.*)

<i>Income Tax</i>Ten per cent. on all Incomes of 200 <i>l.</i> and above, with smaller graduated rates on Incomes of 60 <i>l.</i> to 200 <i>l.</i>		7,500,000
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1800.

(*Budget introduced, 24th February, 1800.*)

<i>Customs</i>Tea	130,000	
Spirits, Home and Foreign	220,	
	<hr/>	350,000

1801 (*Fourteen Items.*)(*Budget introduced, 17th February, 1801.*)

<i>Customs</i> ....Tea	30,000	
Calicoes, drawbacks repealed.....	155,	
Timber	95,	
Pepper	119,	
Sugar	166,	
Raisins	10,	
Lead	120,	
	<hr/>	695,000
<i>Excise</i> .....Paper	130,000	
Various Duties	261,	
	<hr/>	391,000
<i>Stamps</i> ....Bills of Exchange	112,000	
Marine Insurance	145,	
Conveyance Stamps	93,	
	<hr/>	350,000
<i>Post Office</i> ... Increased rates		150,000
<i>Assessed Taxes</i>....Horses of all kinds		306,000
		<hr/>
		1,892,000
TOTAL OF TAXES IMPOSED IN THE EIGHT YEARS		<hr/>
		£25,877,000

L.—STATEMENT of the MOTIONS made in PARLIAMENT by the Party in OPPOSITION to MR. PITT in order to DEFEAT the Prosecution of the WAR, from December, 1792, to May, 1797.

In the following List only those Motions are included which were intended to raise, and which did raise formal discussions. If all the minor amendments and proceedings which had the same end in view had been included, the catalogue would have been unwieldy.

A short statement is also given of the three abortive negotiations for Peace, which took place in 1796, 1797, and 1800.

The List given in this Appendix, even when taken alone, is a very remarkable catalogue and may serve to suggest, although at best but faintly, some idea of the inveterate and protracted nature of the opposition of the Whig party to the War, and to the Ministry by whom that War was carried on. It is true that Mr. Pitt maintained his numerical majority, but it is easy to understand that the anxiety and interruption occasioned by the constant necessity of meeting the attacks of Mr. Fox and his supporters must have been very great. The debates also had considerable effect in increasing the difficulties of the Government out of doors.

Session 13th December, 1792, to 21st June, 1793.

- 1792.—15 Dec. — Mr. Fox—Motion for sending a Minister to Paris to treat with the Provisional Government of France.—Negatived without a division.
 „ 21 Dec. — Marquis of Lansdowne (Lords)—Motion to same effect.—Negatived without a division.
 1793.—18 Feb. — Mr. Fox.—Resolutions against the War with France.—Negatived 270 to 44.
 „ 21 Feb. — Mr. Grey.—Motion for an Address to restore Peace with France.—Negatived without a division.
 „ 28 Feb. — Mr. Sheridan.—Motion for a Committee of the Whole House to inquire into the truth of the reports of Seditious Practices.—Negatived without a division.
 „ 17 June.—Mr. Fox.—Motion for Re-establishment of Peace with France.—Negatived 187 to 47.

Session 21st January, 1794, to 11th July, 1794.

- 1794.—23 Jan. — Earl Stanhope (Lords)—Motion for acknowledging the French Republic.—Negatived without a division.
 „ 17 Feb. — Marquis of Lansdowne (Lords)—Motion for Peace with France.—Negatived 103 to 13.
 „ 6 Mch. — Mr. Whitbread.—Motion for separate Peace with France.—Negatived 138 to 26.
 „ 4 April.—Earl Stanhope (Lords)—Motion against any interference with the internal Government of France.—Negatived without a division.
 „ 30 May. — Mr. Fox.—Motion for putting an end to the War with France.—Negatived 208 to 55.
 „ 30 May. — Duke of Bedford (Lords)—Motion in same terms.—Negatived 113 to 13.

Session 30th December, 1794, to 27th June, 1795.

- 1795.— 5 Jan. — Earl Stanhope (Lords)—Motion against interfering in the internal state of France.—Negatived 61 to 1.
 „ 26 Jan. — Mr. Grey.—Motion for Peace with France.—Negatived 269 to 86.
 „ 27 Jan. — Duke of Bedford (Lords)—Motion in same terms.—Negatived 88 to 15.
 „ 24 Mch. — Mr. Fox.—Motion for a Committee on the State of the Nation.—Negatived 219 to 63.

- 1795.—30 Mch. —Earl of Guilford (Lords)—Motion in same terms.—Negated 104 to 14.
 „ 27 May. —Mr. Wilberforce. — Motion respecting Peace with France.—Negated 86 to 20.
 „ 5 June. —Earl of Lauderdale (Lords)—Motion in same terms.—Negated 53 to 8.

Session 29th October, 1795, to 19th May, 1796.

- „ 8 Dec. — A Message from the King announced that “such an order of things had been established in France as had rendered him willing to meet any disposition to negotiation on the part of the enemy, with an earnest desire to give it the fullest and speediest effect.”
 „ 9 Dec. — Mr. Sheridan.—Amendment on the Address in reply to the King’s Message.—Negated without a division.

The Negotiation with France began in March, 1796, and after various delays, Lord Malmsbury was accredited to Paris on the 13th October, 1796, and the negotiation was finally and abruptly broken off by the French Directory on the 20th December, 1796, and its failure announced in the *London Gazette* on the 27th December, 1796.

- 1796.—15 Feb. — Mr. Grey.—Motion respecting a Negotiation for Peace with France.—Negated 189 to 50.
 „ 10 Mar. —Mr. Grey.—Motion for a Committee on the State of the Nation. Negated 207 to 45.
 „ 10 May. —Mr. Fox.—Motion respecting the conduct of the War with France.—Negated 216 to 42.

Session 27th September, 1796, to 20th July, 1797.

- 1796.—30 Dec. — Mr. Fox.—Amendment on the Address relative to rupture of the Negotiation with France.—Negated 212 to 37.
 1797.—23 Mch. —Earl of Oxford (Lords)—Motion for Peace with France.—Negated 52 to 16.
 „ 27 Mch. —Earl of Suffolk (Lords)—Motion for dismissing Mr. Pitt.—Negated 104 to 17.
 „ 10 April. —Mr. Pollen.—Motion for Peace with France.—Negated 291 to 85.
 „ 10 May. —Mr. Whitbread.—Motion of Censure on Mr. Pitt, for his conduct with respect to the Seamen.—Negated 237 to 63.
 „ 19 May. —Alderman Combe.— Motion for dismissing the Ministers.—Negated 242 to 59.
 „ 30 May. —Duke of Bedford (Lords)—Motion in same terms.—Negated 91 to 14.

A Second Negotiation for Peace with France was originated by the English Government in an official note from Lord Grenville to the French Executive, dated 1st June, 1797, and in pursuance of arrangements arising out of that note, Lord Malmsbury, as British Plenipotentiary, met citizens Letourneur, Pleville de Pelley, and Maret, at Lisle, on the 6th July, 1797. The Negotiation was finally broken off by France on the 5th October, 1797. Lord Malmsbury, by the orders of France, had quitted Lisle for London on the 22nd September, 1797.

Session 2nd November, 1797, to 29th June, 1798.

The systematic opposition to the War may be considered to have been terminated with the month of May, 1797. On the 26th of that

month, Mr. Grey moved for leave to introduce a Bill for effecting a Parliamentary Reform, and was defeated by 256 votes to 91. The principal members of the Whig Party then seceded from the House, and persevered in their non-attendance for one or two Sessions. In the Session, therefore, which opened in November, 1797, Mr. Pitt was left comparatively free from attack: Mr. Tierney was active in opposition, but the violent warfare of party was, for the time, at an end.

It may be added that a communication on the subject of a Peace was made by M. Talleyrand, minister for foreign affairs to Bonaparte, as First Consul, in the form of a note to Lord Grenville, dated Paris, 25th December, 1799. The overtures, however, made by France were of a nature which could not be accepted, and the correspondence was terminated by Lord Grenville in a note, dated 20th January, 1800.

M.—MARKET PRICES OF STOCKS, 1791-1800 (both inclusive), with the Market Prices of the SCRIP and OMNIUM of NEW LOANS, and also with Collateral Columns, showing the EQUATED PRICES of 3, 4, and 5 per Cent. Stocks, assuming the Price of the 3 per Cents. to be given.

The following Tables for each year from 1791 to 1800, both inclusive, have been obtained by examination of the returns given for each month in the *Gentleman's Magazine*. Those returns were furnished by the brokers whose names they bear, and give the highest and lowest price of each kind of stock, on each week day of each month: and of their accuracy, and sufficiency for the present purpose, there can be no question.

In forming the following Tables the highest and lowest price in each month has been given, after a careful reference to the daily fluctuations so recorded. The quotations have been confined to 3 per Cent. Consols; 4 per cent., and 5 per cent. stocks, and to Long Annuities, as sufficient for the object now in view.

The columns appropriated to New Loans contain an abstract of all that is recorded under the heads of Scrip and Omnium, terms too familiar to require any explanation here.

The three columns of Equated Prices are inserted in order that the eye may at once perceive the difference between the *actual* prices of the 4 and 5 per cents., and the price which they ought to have borne so as to yield only the same yearly interest as the 3 per cents.

The following statement of the Due-Dates of the half-yearly Dividends of the several kinds of public stocks should be borne in mind in examining the tables of prices:

3 per cent. Consols	5th January and 5th July.
4 „ Annuities	5th April and 10th October.
5 „ „ Annuities	ditto.
Long Annuities 1860	ditto.

The Long Annuities have been granted at various periods, and principally as supplemental additions to Loans principally raised in permanent stocks. All the Long Annuities expire on 5th of January, 1860; and the quarter's annuity between the preceding half-yearly date of 10th October, 1859, and the day of expiry, will be paid on 5th January, 1860. They may be considered therefore as Annuities running to the *end* of the year 1859.

1791.

	ACTUAL PRICES IN MARKET.				Equated Prices of 4's and 5's to the Price of 3's.		
	3 per Cent. Consols.	4 per Cent. Consols.	5 per Cents.	Long Annuities.	3's.	4's.	5's.
				Years' Purchase.			
Jan.	80 -80½	101½-103½	119 -121½	24	80	106	133
Feb.	80 -81½	102 -102½	118½-119	24	81	108	135
March	76 -82	102½-103½	115 -121	24	80	106	133
April	76 -81	97 -101	114½-119½	24	78	104	130
May	80 -82	100 -102	119 -120½	22 -23	81	108	135
June.....	81½-83	101 -102	120½-121	23½-24	82	109	136
July	81 -82½	101 -104	118 -120	24	82	109	136
Aug.....	82 -89	104 -107	116 -123	24 -26½	85	113	141
Sept.	88 -90	104 -105	117 -118	26½	90	120	150
Oct.	87 -89	104½	115 -118	....	88	117	147
Nov.....	89 -88	100½-101½	117½-118½	25½	87	116	145
Dec.....	87½-90	101½-103½	118 -119	26 -27½	88	117	147

1792.

	ACTUAL PRICES IN MARKET.				Equated Prices of 4's and 5's to the Price of 3's.		
	3 per Cent. Consols.	4 per Cent. Consols.	5 per Cents.	Long Annuities.	3's.	4's.	5's.
				Years' Purchase.			
Jan.	90 -92	102 -103½	116½	26	91	121	151
Feb.	92 -96½	103 -107	116½-120	26	94	125	156
March	96 -97	104 -105½	119 -120	26 -28	96	128	160
April	92 -97	100 -105	118½-120	28	94	125	156
May	87 -95	97 -101	118 -119	26	92	122	153
June.....	91½	100 -101	119 -120	26 -26½	91	121	152
July	91	100 -103	....	26	91	121	152
Aug.....	90 -92½	101 -103	117 -118	26½	91	121	152
Sept.	88½-91	100½-102	116 -118	26	90	120	150
Oct.	89 -91	100½	116 -118½	25½	90	120	150
Nov.....	83 -90½	95 -100½	113 -118½	23 -25½	85	113	141
Dec.	74 -83	88½-95	104 -113½	21½ -23	80	107	133

1793.

	Actual Prices in Market.				New Loans. Actual Prices.	Equated Prices of 4's and 5's to the Price of 3's.		
	3 per Cent. Consols.	4 per Cent. Consols.	5 per Cents.	Long Annuities.	3 per Cent. Scrip.	3's.	4's.	5's.
				Years' Purchase.				
Jan.	78 -73	92 -89	107 -104	23 -22	....	75	100	125
Feb.	74 -71	....	104 -102	....	....	72	96	120
March	72 -77	89	104 -111	21½-22	....	75	100	125
April	77 -79	....	107 -109	....	1½-2 Pm.	78	104	130
May	74½-77	89 -90	108 -107	22	1 -1½ Pm.	75	100	125
June	76 -77	90 -91	108 -109	22	1 -1½ Pm.	76	101	126
July	79½-77	91 -94½	111	22½	1 -1½ Pm.	78	104	130
August	78 -76	93 -94	110 -117½	22½	1 -1½ Pm.	77	103	128
Sept.	73½-76	92 -93	106 -105	22	1½-2 Pm.	75	100	125
Oct.	74½-75	....	106½	....	1½-2 Pm.	75	100	125
Nov.	74 -75	88 -89	106 -108	21	½ 1 Pm.	75	100	125
Dec.	74 -75	88 -90	109	21½	½ Pm.	75	100	125

1794.

	Actual Prices in Market.				New Loans. Actual Prices.			Equated Prices of 4's and 5's to the Price of 3's.		
	3 per Cent. Consols.	4 per Cent. Consols.	5 per Cents.	Long Annuities.	3 per Cent. Scrip.	4 per Cent. Scrip.	Omnium.	3's.	4's.	5's.
				Years' Purchase.						
Jan.	74 -68	89 -84	....	20½	....	....	....	72	96	100
Feb.	67 -65	84 -83	101	20	....	....	....	66	88	110
March	68 -66	82 -83	101	20	2 Pm.	....	....	67	90	113
April	67 -71	85	101-106	20½	1½-2 Pm.	1½-3 Pm.	2 -6½ Pm.	69	92	115
May	70 -71	84 -85	103-104	20	2 -3 Pm.	3 -4 Pm.	6 -5 Pm.	70	93	117
June....	71 -68	85 -83	103-104	20	½-1½ Pm.	2 -3 Pm.	5½-3 Pm.	70	93	117
July	67 -69	83 -85	....	20	1 -1½ Pm.	2 -3 Pm.	½-3 Pm.	68	90	113
Aug.	66 -68	84 -85	101½	20	1 -1½ Pm.	1 -1½ Pm.	....	67	89	112
Sept.	67 -64½	85	102	20¼	1 -1½ Pm.	1 -1½ Pm.	1 Dis.	65	87	108
Oct.	64½-66	83	99½-100	....	1 -1½ Pm.	1 -1½ Pm.	....	65	87	108
Nov.	66 -68	85 -83	100-102	19½-21	....	....	....	67	89	112
Dec.	69 -64	85 -80	103-100	20 -18½	....	....	....	65	87	108

1795.

	Actual Prices in Market.				NEW LOANS. ACTUAL PRICES.	Equated Prices of 4's and 5's to the Price of 3's.		
	3 per Cent. Consols.	4 per Cent. Consols.	5 per Cents.	Long Annuities.	Omnium.	3's.	4's.	5's.
				Years' Purchase.				
Jan.	65 -61	81 -79	99 -96	19 -18	....	63	84	105
Feb.	63 -62	79 -80	97 -95	18½	....	63	84	105
March	62 -63	79	95	18¼	1½-2 Pm.	63	84	105
April ..	62 -65	78	95 -99	18½	1½-5 Pm.	64	85	107
May ...	65 -66	78 -79	99 -97	18½	3 -6 Pm.	65	87	108
June....	65 -67	79 -81	97½-98½	18½	6 -9 Pm.	66	88	110
July ...	67 -70	81 -83	....	19	8 -11 Pm.	68	91	113
Aug....	66 -68	82 -84	97 -99	19½-20	12 Pm.	67	89	112
Sept. ..	67 -69	84 -86	98 -101	19½	....	68	91	113
Oct.	69 -67	84 -85	100-101	19	....	63	91	113
Nov....	67 -68	83 -86	101-103	19	....	67	89	112
Dec....	68 -70	83 -87	101-103	18½-20	7 -10 Pm.	69	92	115

1796.

	Actual Prices in Market.				NEW LOANS. ACTUAL PRICES.	Equated Prices of 4's and 5's to the Price of 3's.		
	3 per Cent. Consols.	4 per Cent. Consols.	5 per Cents.	Long Annuities.	Omnium.	3's.	4's.	5's.
				Years' Purchase.				
Jan.	71 -68½	84½-85½	104-101	19½	9 -10 Pm.	70	93	117
Feb.	68½-67½	85½-84	100-101	19½	10-8 Pm.	67	89	113
March	67½-70	85 -85½	100	....	9 -11 Pm.	68	91	114
April ..	69 -66½	84 -82½	100-99	18½	11-6 Pm.	68	91	114
May ...	66½-62½	83 -80	99 -96	18½-17½	3½ Pm.	64	85	107
June....	62½-64½	81 -79½	96 -94	17½	2½ Pm.	63	84	105
July ...	64½-60½	80 -79	95 -89	18 -17½	6 -7 Dis.	62	83	103
Aug....	60 -58½	79 -78	89 -88	16 -17	....	59	79	98
Sept. ..	58 -56	77 -74	88 -82	17 -16	....	57	76	95
Oct.	60 -57	....	83 -89	....	....	58	77	97
Nov....	60 -57	75 -72	89 83½	16 -16½	Loyalty Loan	58	77	97
Dec....	58 -57½	72½-74	86 -88	16	½ Pm.-½ dis.	57	76	95

1797.

	Actual Prices in Market.				New Loans. Actual Prices.		Equated Prices of 4's and 5's to the Price of 3's.		
	3 per Cent. Consols.	4 per Cent. Consols.	5 per Cents.	Long Annuities.	Loyalty Loan.	Omnium.	3's.	4's.	5's.
				Years' Purchase.					
Jan.	55 -56½	71½-73	82½-84	16	4 -5 dis.	....	55	73	92
Feb.	56 -51	74 -66	83 -76	16 -15½	7 -10½ dis.	....	53	71	88
March	51 -50	67	77 -72	15	11-15½ dis.	....	50	67	83
April ..	51 -48	....	73 -76	....	....	....	50	67	83
May	48	62 -60	76 -74	14	1-2 Pm.	....	48	65	81
June....	47 -53	60 -64	75 -78½	13½-14	2-11½ Pm.	....	49	66	80
July	52 -55	64 -65	78	14½-15	11- 4 Pm.	....	53	71	88
Aug.....	51½-52½	64 -65½	75 -77	15	....	10 Pm.	51	68	85
Sept....	52 -48	61 -65	75 -72	14½	....	11-14 Pm.	50	67	83
Oct.	48 -50	61 -59	71 -73	13½	....	4 -2 Pm.	49	66	80
Nov.....	49 -48	59 -59½	72 -71	13½	....	....	48	65	81
Dec.....	48 -49	59 -60	72	13 -13½	....	4 Pm.	48	65	81

1793.

	Actual Prices in Market.				NEW LOANS. ACTUAL PRICES.		Equated Prices of 4's and 5's to the Price of 3's.		
	3 per Cent. Consols.	4 per Cent. Consols.	5 per Cents.	Long Annuities.	4 per Cent. Serip.	Omnium.	3's.	4's.	5's.
				Years' Purchase.					
Jan.	49½-47½	59	70	13½	....	....	48	65	81
Feb.	47 -50	60 -61	69 -71	13½-14	....	....	48	65	81
March	49 -51	61 -63	71 -73	14	....	....	50	67	83
April ..	48 -50	....	71 -74	13½	....	....	49	66	82
May	48 -48½	58 -60	71 -75	13½	....	....	48	65	81
June....	49 -49½	61 -60	76	14	1 -2 Pm.	....	49	66	82
July	49 -50	61 -63	74 -75	14	1 -2 Pm.	....	50	67	83
Aug.....	49 -50	64 -66	76 -78	14 -15	3 -7 Pm.	....	50	67	83
Sept....	49 -51	65	77 -79	14 -15	5 -7 Pm.	....	50	67	83
Oct.	51 -53	67	80 -82	....	7 -12 Pm.	....	52	69	87
Nov.....	53 -57	65 -70	82 -87	....	18-20 Pm.	New Loan.	55	73	92
Dec.....	53 -55	65 -68	82 -83	15½	....	1 Pm. par.	54	72	90

1799.

	Actual Prices in Market.				New Loans. Actual Prices.	Equated Prices of 4's and 5's to the Price of 3's.		
	3 per Cent. Consols.	4 per Cent. Consols.	5 per Cents.	Long Annuities.	Omnium.	3's.	4's.	5's.
				Purchase. Years'				
Jan.	55 -53½	66 -68	80 -82	15½	1 Dis.	54	72	90
Feb.	52 -54	68 -70	81 -84	15½-16	½ dis 1 Pm.	53	71	88
March	53 -54	70 -71	82 -84	16	....	53	71	88
April ..	53 -55	70	82 -85	16	....	54	72	90
May	55 -56	69 -70	88 -86	16	....	55	73	92
June....	56 -62	70 -76	87 -88	16 -17	4 -8 Pm.	58	77	97
July	61 -66	76 -83	90 -96	17½-19	6 -12 Pm.	63	84	105
Aug.....	62 -68½	81 -86	93 -99	19	9 -20 Pm.	65	87	108
Sept ..	69 -61	86 -83	94 -98	19½	20-8 Pm.	67	89	112
Oct.	61 -58	76½-74	98 -88	17½	11-3 Pm.	60	80	100
Nov.....	59 -63	74 -77	91 -94	17½	5 -10 Pm.	61	81	101
Dec.....	61 -62	76 -77	90 -92	18	10 Pm.	61	81	101

1800.

	Actual Prices in Market.				New Loans. Actual Prices.	Equated Prices of 4's and 5's to the Price of 3's.		
	3 per Cent. Consols.	4 per Cent. Consols.	5 per Cents.	Long Annuities.	Omnium.	3's.	4's.	5's.
				Years' Purchase.				
Jan.	60½-63½	76½-78	91	18	9-10½ Pm.	61	81	101
Feb.	60½-62½	77½-80	92 -94	18	1½-2 Pm.	61	81	101
March	62 -63	80 -81	94 -95	18½	1 -2 Pm.	62	83	103
April	63 -64	82 -83	96 -98	....	2 -3 Pm.	63	84	105
May	63 -64	81 -82	98	19	1½-2 Pm.	63	83	103
June	64 -64½	81 -82	98 -99	18½	1 Pm.	64	85	107
July	62 -65	81 -84	96 -99	18½	2 -4½ Pm.	63	83	103
Aug.	63 -65	83 -85	97 -99	19½	3 -5 Pm.	64	85	107
Sept.	64½-65	84 -85	98 -99	19½	4½-6 Pm.	65	87	108
Oct.	63 -67	80 -84	98 -99	19½	3½-4½ Pm.	65	87	108
Nov.	64 -63	80 -81	99 -99½	19	2 -4 Pm.	64	85	107
Dec.	64 -62½	78 -80	98	18	½-3 Pm.	63	83	103

N.—DETAILED COMPUTATIONS of the Effect Produced during a Period of Years by the ANNUAL SAVING of INTEREST on Loans Contracted in LOW RATE Stocks as compared with HIGH RATE Stocks.

This Appendix refers to the Table which, at page 29 of the text, shows the comparative results of the Ten Largest Loans, (1793-1801,) as actually raised in Low-Rate Stocks, and as they would have been raised in Five per cents., carrying the computation to the 1st January, 1826, as a date which may be considered as a fair mean date.

The two following detailed calculations, relating to the Loan of 4,500,000*l.* of 11th March, 1793, and the Loan of 18,000,000*l.* of 23rd February, 1795, will sufficiently illustrate the mode in which the general result of 27,256,000*l.*, in favour of the Low-Rate Method (see page 29 ante) is arrived at. Similar calculations were made for the other Eight Cases, but it is not considered necessary to print more than the two following examples; and the detailed form in which the several steps of the process are explained in the computations preclude the necessity of further elucidation of that process here.

As a matter of fact the 5 per cents. were reduced to 4 per cents., from 1st January, 1823;—the 4 per cents. to $3\frac{1}{2}$ per cents., from 1st January, 1831;—the $3\frac{1}{2}$ per cents. to $3\frac{1}{4}$'s, from 1st January, 1845;—and the $3\frac{1}{4}$'s to 3 per cents., from 1st January, 1855. There were some fractional differences of date; but for the present general purpose they may be disregarded. In truth, therefore, 5 per cents. created in, say 1795, were not actually reduced to 3's till sixty years afterwards (1st January, 1855).

Now to follow out the calculation through all the several stages of reduction of interest would, for the present object, be a needless refinement, and it seems to me that all substantial purposes will be served by taking the 1st January, 1826, as a Mean Date, on which to assume the reduction of the 5 per cents. to 3 per cents.

It also seems to me that Six per cent. is a fair and proper rate of interest to assume in reckoning the accumulations. During the War money left in the pockets of the people was certainly worth 6 per cent. to the State. Some objections may be made to the rate of 80 as the price of stock assumed in the calculation; and it may be said that the 1st January, 1826, was a period of great depression. My reply is that, taken as a whole, I believe that I have put the case fairly. It is quite open to any one to carry out the computation in all its details, but I do not think that his result would differ very much from mine.

It will be seen by the prices given in Appendix M, and the Rates of Interest given in Appendix B, that the Long Annuities always bore a low relative price compared with Consols, and nearly always a low relative price as regards 4 per cents., and even 5 per cents.; and we are justified in assuming, even by the evidence contained in the present Paper, that it would have been impracticable, perhaps impossible, to have raised the Loans of 1793-1801 to a greater extent in Long Annuities than was actually accomplished. If this part of the case could be more fully investigated I am led to believe that the conclusion now suggested would be amply sustained. The Long Annuities answered very well as a supplemental element of the Fund-

ing, but they could not have borne the weight of any considerable part of the operation. As a matter of mere calculation a very plausible case may be made in favour of Long Annuities as a practical mode of borrowing; but we cannot too constantly remember that, in negotiating public loans, there are contractors and stock-jobbers to be consulted as well as ingenious calculations to be made; and, on this point, the passage from Mr. Huskisson's speech of 3rd March, 1813, on the state of the Finances and the Sinking Fund (quoted in the text at page 28 ante), should be borne in mind.

LOAN—23 FEBRUARY, 1795.—£13,000,000.

		STOCK ACTUALLY CREATED.			Interest on Stock created.			Long Annuity
		3's.	4's.	5's.	3's.	4's.	5's.	
Average Rate actually paid.....	£ s. d. 4 16 2	£ 18,000,000	£ 6,000,000	£ nil.	£ 540,000	£ 240,000	£ nil.	£ 85,500
		24,000,000 Stock.			865,500 Interest.			for 65½ yrs.
Totals								

Estimated Average Rate at which the Loan could have been raised in 5 Per Cents, say 110 Stock	5 10 .	=	19,800,000	„		990,000	„
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Differences — 4,200,000 Stock. + 124,500 Interest.

Amount at 6 per cent. of 124,500*l.* per annum (1795-1825) for 31 years, = 10,558,000*l.* money, which converted into 3 per cent. Stock at 80 as on 1st Jan. 1826, gives 13,197,000 „

Difference 8,997,000 Stock.

From which deduct..... 2,035,000 „

Being the value at 3½ per cent. on 1st Jan. 1826, of 85,500*l.* per annum Long Annuity, having 34 years to run = 1,628,000*l.* money, which at 80 gives 3 Per Cent. Stock 2,035,000*l.*

Leaves Net Difference AGAINST the Five Per Cent. Method as on 1st Jan., 1826 6,962,000 Stock.

LOAN, 11 MARCH, 1793.—£4,500,000.

	STOCK ACTUALLY CREATED.			Interest on Stock created.			Long Annuity.
	3's.	4's.	5's.	3's.	4's.	5's.	
	£	£	£	£	£	£	£
Average Rate actually paid.....	4	3	4	6,250,000	nil.	nil.	187,500
Totals	6,250,000 Stock.			187,500 Interest.			
Estimated Average Rate at which the Loan could have been raised in 5 Per Cents., say 105 Stock	5	5	0	=	4,725,000	„	236,250
Differences	- 1,525,000 Stock.			+ 48,750 Interest.			
Amount at 6 per cent. of 48,750 <i>l.</i> per annum (1793-1825) for 33 years = 5,931,000 <i>l.</i> money, which converted into 3 per cent. Stock at 80 as on 1st Jan. 1826, gives	5,931,000			„			
Net Difference AGAINST the Five Per Cent. Method, as on 1st Jan. 1826 }	4,406,000			„			

(0.) SIMILAR COMPUTATIONS AS REGARDS THE LOAN FOR IRELAND, OF £3,000,000.—1 MARCH, 1847.

	Average rate of Interest.	STOCK CREATED.		Annual Interest.	
		3's.	3½'s.	3's.	3½'s.
		£	£	£	£
As actually raised in 3 per cents., at 111·7 Stock, per 100 <i>l.</i> money	3	7	0	8,938,000	....
		8,938,000 Stock.		268,156 Interest.	
As estimated to be raised in 3½ per cents., at 107·5 Stock, per 100 <i>l.</i> money	3	15	3	=	8,602,000
		„		301,072	
		- 336,900 Stock.		+ 32,916	
Amount of 32,916 <i>l.</i> per ann. in 15 years, at 5 per cent. per ann., converted into 3 per cent. Stock, at say 90		770,000		„	
Surplus in favour of 3 Per Cent. Method		434,000 Stock.			

This Appendix O is referred to in the text (page 32, ante), and shows the detail of the calculations the result of which justifies us in assuming, that in the course of fifteen years, the difference in favour of the 3 per cent. Method of borrowing would amount to 434,000*l.* stock, at 90, or say 391,000*l.* money. It will be seen, that the calculation, in this case, is precisely the same in principle as the calculations referred to at length in the last Appendix N.

P.—STATEMENT *in Detail of the TERMS of the SEVERAL LOANS 1793-1801, as given by Mr. GRELLIER in the Third Edition (1812) of his WORK on the subject.*

I have already referred in the text (page 8) to the very useful book by Mr. Grellier, intitled “Terms of all the Loans which have been raised for the Public Service,” &c., originally published in 1805, and the third and last edition of which appeared under the Editorship of “R. W. Wade, Secretary to the Committee of the Stock Exchange,” in 1812.

As this book is now very rarely met with, I am glad of the opportunity of embracing in this Appendix those portions of it which relate to the Loans of 1793-1801. I have printed the several statements precisely as they are given by Mr. Grellier, venturing only upon a few verbal alterations not worth particularizing. I may say, however, that there is some difficulty in ascertaining in all cases the precise dates on which the Loans were finally contracted for by Mr. Pitt; for, as regards most of those transactions, the Minister gradually adopted the course, as on the whole most convenient, of arranging conditionally for the Loan before introducing his Budget. Practically, therefore, the date of the Loan was some days earlier than its public and formal announcement. I have taken some pains to settle these exact dates, and I hope generally with success—

1793—*March.*

Loan of 4,500,000*l.*

“For every 72*l.* Money advanced—

100*l.* Stock, 3 per cent. Consols; the interest from 5th Jan. 1793.

The instalments were 10 per cent. on 4th April, 10 per cent. on 31st May, on 19th July, and on 16th August; 15 per cent. on 27th September, on 8th November, on 13th December; and finally on 24th January, 1794.

Those who paid in the whole on or before the 12th December were allowed discount at 3 per cent. per annum, from the day of completing their payment to the 24th January, 1794.

It was originally intended to have raised this Loan on 4 or 5 per cent. stock; but the embarrassed state of commercial credit having caused a scarcity of money the minister only received offers from one set of subscribers: and, as they preferred 3 per cents., it was judged expedient to conclude the bargain in that stock at the above price, which was between 4 and 5 per cent. under the current price. It was intended that the Commissioners for liquidating the Debt should have been admitted to subscribe for 1,650,000*l.*, which the amount of the fund at that time would have enabled them to have done; but this measure was relinquished from the considerations that the daily purchases made by the Commissioners contribute materially to keep up the price of stocks; and that by such subscription the period when the 5 per cents. would become redeemable would be delayed.

Mr. Pitt admitted that the terms were much more disadvantageous to the public than might have been expected; but, having done everything in his power to excite a competition without effect, they were the best he could procure.”

1794.—5th February.

LOAN of 11,000,000*l*.

“ For every 100*l*. Money advanced—

100*l*. Stock, 3 per cent. Consols ; the interest from 5 Jan. 1794.

25*l*. Stock, 4 per cents. . . . ditto 10 Oct. 1793.

11*s*. 5*d*. Long Annuity for 66¼ years, ditto ditto

The instalments were 10 per cent. deposit ; 10 per cent. on 15th April, on 6th June, and on 18th July ; 15 per cent. on 29th August, on 17th October, on 28th November, and finally on 13th January, 1795.

Those who paid in the whole at any time before the 27th of November were allowed discount at 3 per cent. per annum, on the sum paid in advance, from the day of completing their payment to the 13th January, 1795 ; and if the whole of their contribution was paid on or before the 2nd of April were entitled to receive the half-year's annuity, due the 5th April, on the 4 per cents. and Long Annuity ; or if the whole contribution was paid on or before the 2nd July, the 7th October, or the 2nd of January, were entitled to receive the respective half-year's annuities then becoming due.”

1795.—23rd February.

LOAN of 18,000,000*l*.

“ For every 100*l*. Money advanced—

100*l*. Stock 3 per cent. Consols ; the interest from 5th January.

33*l*. 6*s*. 8*d*., Stock 4 per cents. . . . ditto 10 Oct. 1794.

8*s*. 6*d*. Long Annuity for 65¼ years ; ditto 10 Oct. 1794.

With an agreement that for every 100*l*. the contributor should be at liberty to contribute 33*l*. 6*s*. 8*d*. to every Loan not exceeding 6,000,000*l*. for the service of the Emperor ; and in case no such Loan should be guaranteed by Parliament should have a further Long Annuity of 4*s*. 6*d*. for every 100*l*. ; or if the Loan should be less than 6,000,000*l*. a further Annuity in the proportion of 6*d*. per cent. for every 750,000*l*. the proposed Loan should fall short of 6,000,000*l*. The Imperial Loan was afterwards fixed at 4,600,000*l* ; the additional Long Annuity granted according to the agreement was therefore 1*s*. per cent.

The instalments were 10. per cent. deposit ; 10 per cent. on 17th April, on 12th June, and on 17th July ; 15 per cent. on 28th August, on 23rd October, on 27th November, and finally on 15th January, 1796.

Those who paid in the whole before the 20th March were allowed discount at 3 per cent. per annum, from 23rd January, 1795, to the 15th January, 1796 ; and those who paid in the whole after that time, but before the 27th November, were allowed discount from the day of completing the subscription to the 15th January, 1796.

The Imperial Loan being 4,600,000*l*. the subscribers to the above Loan for every 100*l*. contributed the further sum of 25*l*. 11*s*. 1½*d*., towards the Imperial Loan, the terms of the latter being for every 100*l*. advanced 83*l*. 6*s*. 8*d*., 3 per cents. and an Annuity of 5*l*. for 25 years.”

1795.—7th December.

LOAN of 18,000,000*l*.“ For every 100*l*. Money advanced—120*l*. Stock, 3 per cent. Consols; the interest from 5th July, 1795.25*l*. Stock, 3 per cent. Reduced from the 10 Oct. 1795.6*s*. 6*d*. Long Annuity for 61 $\frac{1}{4}$ years; ditto.

The instalments were 10 per cent. 10th December, 1795; 10 per cent. 20th January, 1796, on 18th March, and on 20th May; 15 per cent. on 22nd July, on 9th September, on 11th November, and finally on 16th December.

Those who paid in the whole before 30th December, 1795, were allowed discount at 3 $\frac{1}{4}$ per cent. per annum, from the day of completing the payment to the 16th December, 1796; and those who paid in the whole after 30th December, 1795, and before 10th November, 1796, were allowed the usual discount 3 per cent. per annum.

The terms of this Loan excited considerable discussion; and it appeared on an investigation of the business, that it might have been negotiated at 3*s*. Long Annuity per cent. less; but the Minister thought himself under some obligation to accede to the proposal of the subscribers to the last Loan. The terms were settled 25th November, 1795, a short time previous to which the Commissioners for liquidating the Debt, who had hitherto made all their purchases in 3 per cents., began to purchase in the *four* per cents.; a measure, which however proper in itself, certainly was not very judiciously timed, if it was then intended to make the Loan wholly in 3 per cents. Upon a Message to Parliament (relative to peace), soon after the Loan was fixed; and the Commissioners resuming their purchases in 3 per cents., the Omnium got up to 10 and 11 per cent. premium.”

1796.—May.

LOAN of 7,500,000*l*.“ For every 100*l*. Money advanced—120*l*. Stock, 3 per cent. Consols; the interest from 5 Jan. '96.25*l*. Stock 3 per cent. Reduced; ditto 5th April.5*s*. 6*d*. Long Annuity for 63 $\frac{3}{4}$ years; ditto 5th April.

The holders of Exchequer bills, issued pursuant to the Exchequer-bill Acts, of the preceding year, or on the Vote of Credit, or the Consolidated Fund, were at liberty to pay in the same as cash, in making their payments on this Loan.

The instalments were 10 per cent. on 26th April; 10 per cent. on 27th May, on 28th June, and on 29th July; 15 per cent. on 19th August, on 23rd September, and finally on 26th October.

Those who paid in the whole at any time on or before the 22nd September, were allowed discount, at 3 per cent. per annum, from the day of completing their payment to the 26th of October.

The Omnium was at first at a premium of 2 $\frac{1}{2}$ per cent., but soon fell to a discount, which, becoming considerable, the holders of the Omnium pawned at the Bank petitioned the Directors to make the last payment, and hold the Omnium for some time. The direct object of the petition was refused, but it was agreed to admit the repayment

of the sums advanced by the Bank on the Omnium receipts, by three instalments, one-third on the 21st October, which was the period limited, in the bond given by the parties pawning, for the re-payment of the whole money advanced; one-third on the 26th November; and one-third on the 22nd December; the parties paying 5 per cent. interest, and making the last payment on the Loan themselves."

1796.—1st December.

18,000,000*l.* LOYALTY LOAN.

"For every 100*l.* Money advanced—

112*l.* 10*s.*, 5 per cents., from 10th October, 1796, irredeemable, unless with the consent of the Proprietors, until the expiration of three years after the 5 per cents. existing at the time this Loan was made, shall have been redeemed or paid off; but with an option, on the part of the Proprietors, to be paid at par, at their desire, on giving six months previous notice, at any shorter period, not less than two years from the conclusion of a definitive treaty of peace. The payment, in either case, to be made in money, or, at the option of the holder, in 3 per cent. stock, at the rate of 133*l.* 6*s.* 8*d.*, 3 per cent. Consols, for every 100*l.* 5 per cents.

The instalments were 10 per cent. 13th January; 10 per cent. 17th March, on 21st April, and on 2nd June; 15 per cent. on 21st July, on 25th August, on 28th September, and finally on 31st October.

Those who paid before 13th January were allowed discount at 5 per cent. per annum to that time, and on 90*l.* discount at 3 per cent. from 13th January to the 31st October. Those who paid in the whole between the 13th January and the 17th March were allowed discount at 3 per cent. per annum on 10*l.* from 17th March, and on 80*l.* from the day of completing their payment to 31st October. Those who paid in the whole between the 17th March and the 28th September were allowed the usual discount, at 3 per cent., from the day of completing their payment to the 31st of October.

The subscription to this Loan, since known by the name of the Loyalty Loan, was opened 1st December, 1796, and before twelve o'clock on Monday the 5th the whole 18,000,000*l.* was subscribed, and much more might have been obtained."

1797.—26th April.

LOAN of 14,500,000*l.*

"For every 100*l.* Money advanced—

125*l.* Stock 3 per cent. Consols; interest from 5th Jan. 1797.

50*l.* Stock 3 per cents. Reduced ditto, 5th April.

20*l.* Stock 4 per cents. ditto 5th April.

6*s.* 6*d.* Long Annuity for 62 $\frac{3}{4}$ years, ditto 5th April.

upon condition that the Subscribers should be entitled to contribute in proportion to an intended Loan of 3,500,000*l.* for the Emperor of Germany, and that, if provision should not be made for an Imperial Loan to the amount proposed, a deduction of 6*d.* per cent. should be made from the Long Annuity of 6*s.* 6*d.* for every million that the Imperial Loan should be less than three millions and a half.

The instalments were 10 per cent. on 28th April; 10 per cent. on 26th May, on 21st June, on 18th July, and on 15th August; 15 per cent. on 15th September, on 17th October, on 17th November, and finally on 29th December.

Those who paid in the whole on or before the 17th November were allowed discount at 4 per cent. per annum, from the day of completing their contribution to the 29th December; and those who paid in any part of the contribution before the days fixed for payment of the same, were allowed discount at 5 per cent. on the sum so paid in advance, from the day of payment to the days on which such sum would have become payable.

The Imperial Loan being fixed at 1,620,000*l.* the Long Annuity was reduced to 6*s.* per cent., according to the agreement. The terms of the Imperial Loan were 22*l.* 10*s.* Imperial 3 per cents. for every 100*l.* advanced; interest from 31st January."

1798.—1st May.

LOAN of 17,000,000*l.*

"For every 100*l.* Money advanced—

150*l.* Stock 3 per cent. Consols; the interest from 5th Jan. '98.

50*l.* " 3 per cent. Reduced; ditto 5th April.

4*s.* 11*d.* Long Annuity for 61 $\frac{3}{4}$ years ditto 5th April.

The instalments were 10 per cent. on 30th April; 15 per cent. on 23rd May; 15 per cent. on 22nd June, on 20th July, and on 23rd August; 10 per cent. on 21st September, on 23rd October, and finally on 23rd November.

Those who paid in the whole on or before 22nd October were allowed discount at *five* per cent. per annum, from the day of completing their contribution to the 23rd November. The terms were settled on the 23rd April.

Exchequer-bills issued pursuant to 37 Geo. III., c. 10, and c. 144, were receivable as cash on the deposit or first instalment, also 3,000,000*l.* which had been raised by Exchequer-bills in anticipation of the Loan, was repaid by making the bills receivable to the amount of 1,200,000*l.* on the second instalment, and 1,800,000*l.* on the third instalment. The Bank was likewise authorized to retain 3,000,000*l.* which they had advanced on Exchequer-bills out of the fourth, fifth, and sixth instalments.

The Assessed Taxes were charged with the interest and redemption of a capital equal to the stock created by eight millions of this Loan, which charge was afterwards transferred to the Income-tax; but the subscribers had nothing to do with this arrangement, the whole loan being charged as usual on the consolidated fund, two millions of the sum borrowed was for the service of Ireland."

1798.—7th December.

LOAN of 3,000,000*l.*

"For every 100*l.* Money advanced—

100*l.* stock 3 per cent. Consols, the interest from 5th Jan. '99.

And 87*l.* 9*s.* 6*d.* 3 per cent. Reduced, ditto 10th Oct. '98.

The instalments were 10 per cent. on 14th December, 1798; 30 per cent. on 22nd January, 1799, on 8th February, and on 22nd February.

As the whole sum was thus to be advanced within a short period, no discount was allowed for prompt payment. The extent of the Loan was expected to have been sixteen or eighteen millions, but it was thought proper to negotiate only 3 millions, and to defer the remainder a few months, till the returns on the Income-tax were obtained. On the 7th December, the day on which the terms of the Loan were settled, 3 per cent Consols were $52\frac{1}{2}$, the offers that were made were as follows:—

	Consols.	Reduced.
		£ s. d.
Robarts, Goldsmid, and E. P. Salomons	100	90 10 0
Boyd and Company	100	89 13 6
J. Battye, for the Stock Exchange	100	89 10 0
D. Giles	100	88 15 0
Boldero, for the Bankers	100	87 9 6

1799.—5th June.

LOAN of 15,000,000*l*.

“For every 100*l*. Money advanced—

123*l*. Stock 3 per cent. Consols, the interest from 5th July, 1799.

50*l*. ditto Reduced ditto 5th April.

The instalments were 10 per cent. on 11th June; 15 per cent. on 19th July; 15 per cent. on 20th August; 15 per cent. on 20th September, on 22nd October, on 22nd November, and finally on 20th December.

Those who paid in the whole on or before the 21st November were allowed discount at *five* per cent. per annum, from the day of completing their contribution to the 20th December. The whole sum allowed for discount was 162,612*l*. 9*s*. 2*d*.

This Loan was settled 5th June; Mr. Pitt proposed the above terms, and left the contractors to offer on Long Annuity; but three of the parties agreeing to take it without *any* Long Annuity it was divided equally between them. The Omnium experienced great variations; the premium was at first 4 and 5 per cent., on 20th August it had risen to $19\frac{3}{4}$, and on the 3rd September was at $22\frac{1}{4}$; it soon after fell considerably, and on the 14th October was at $4\frac{1}{2}$, $2\frac{1}{4}$, $3\frac{3}{4}$; but on 18th November had got up again to 12.

Three Millions of the sum borrowed was for the service of the Government of Ireland. The Income Tax was charged with the interest and redemption of a capital equal to eleven millions of this Loan.”

1800.—21st February.

LOAN of 20,500,000*l*.“For every 100*l*. Money advanced—110*l*. stock 3 per cent Consols, the interest from 5th Jan. 1800.47*l*. ditto Reduced ditto 10th Oct. 1799.

The instalments were 10 per cent. on 28th February; 10 per cent. on 10th April; 10 per cent. on 16th May; 10 per cent. on 20th June; 10 per cent. on 18th July; 10 per cent. on 22nd August; 10 per cent. on 19th September, on 17th October, on 21st November, and finally on 12th December.

Those who paid in the whole on or before the 20th November were allowed discount at 4 per cent. per annum, from the day of completing their contribution to 12th December. The whole sum allowed for discount was 176,672*l*. 18*s*. 9*d*.

The contract was made on the 21st February. There were five lists formed, but three of them viz., Messrs. Robarts and Company, Sir F. Baring, and Mr. Giles, bid the same terms, by agreement, and took the Loan between them. The other offers were:—

	Consols.	Reduced.
The Bankers	110	51 $\frac{3}{4}$
The Committee of the Stock Exchange	110	49

Notwithstanding the high terms on which the loan was taken, it bore a premium of 2 $\frac{1}{2}$ per cent. immediately. The premium did not, however, at any time get above 7 per cent., and it was at this price, only for a day or two, towards the end of September.

Two millions of the sum borrowed was for the service of Ireland. The Income-tax was charged with the interest and redemption of a capital equal to the stock created by 13 $\frac{1}{2}$ millions of this loan.”

1801.—16th February.

LOAN of 28,000,000*l*.“For every 100*l*. money advanced—125*l*. stock 3 per cent. Consols, from 5th January, 1801.50*l*. 15*s*. ditto Reduced, from 10th October, 1800.

The instalments were 10 per cent. on 20th February, on 17th April, on 15th May, and on 19th June; 15 per cent. on 17th July; 10 per cent. on 21st August, on 18th September; 15 per cent. on 16th October; and finally 10 per cent. on 11th December, 1801.

Those, who paid in the whole on or before the 15th October, were allowed discount at 5 per cent. per annum from the day of completing their contribution to the 11th of December.

The terms of this Loan were settled on the 16th of February, and it was taken between two lists. The other offers were as follows:—

	Consols.	Reduced.
The Bankers	125	57
Newnham Everett and Co.	125	56
Smith, Payne, and Smiths.....	125	56
The Committee of the Stock Exchange	125	53

The Omnium was at first at a premium of 3 per cent.; but, on the 24th of February, was at $1\frac{1}{2}$, and on the 4th of March at only $\frac{3}{4}$; about three weeks after it got up to 6, and on the 17th of April to 10, from which time it fluctuated between 5 and $10\frac{1}{2}$ till the 2nd of October, when, on the signing of the preliminaries of peace being known, it rose from $6\frac{3}{4}$, the price of the preceding day, to 18 per cent., and on the 20th of October was at 25 per cent. premium."

Q.—GENERAL VIEW of all the Loans raised during the ENTIRE PERIOD of the War, or from 1793 to 1815; and Computations as to the General Comparative Effect of raising the Extra Expenditure by Loans or by Supplies within the Year.

There are two valuable Tables (at pages 422 and 445) in Mr. McCulloch's Treatise on Taxation and the Funding System, which taken together, and with the addition of a few supplemental columns, present perhaps the most complete and concise view to be met with of all the Loans of the entire period of the War of 1793-1815. Both Tables are compiled from Parliamentary Papers, and are believed to exhibit the facts as accurately as the state of the accounts in the several departments admits. These two Tables are included in this Appendix, and are marked I. and II.

Table I. is founded upon the Table at page 445 of Mr. McCulloch's Treatise, and presents a general view of the total operations of each year as regards Money raised, Capital Funded, the Annual Charge of the Loans in the form of Dividends and Long Annuity, and the operations of the Sinking Fund; and in two special columns, 4 and 11, statements will be found (in col. 4) of the Average Amount of Stock given in each year for the money actually raised in that year; and (in col. 11) of the average rate of Interest paid for the money so obtained. These columns are useful, as reducing the general results into a form more intelligible and concise perhaps than any other.

The general result of the Table (I.) is, that from 1793 to 1816 the Money raised and the Stock created were as follows:

1793-1816.	Money Actually Raised.	Capitals Funded.	Annual Charge,
	mils.	mils.	mils.
Actually raised	584,87	879,29	30,17
Operation of Sinking Fund	188,52	302,91	9,17
Leaving	396,35	576,38	21,00

The Table has been divided into groups of years corresponding, as far as possible, with the operation of certain important causes affecting the War, or the mode of raising the Supplies. The years, for example, 1793-1797 was the period of greatest difficulty, and the period also when the largest part of the Supplies was raised by Loan. The following is the Table—

TABLE I.—*Loans 1792-1816.—Money actually Raised ; Capitals Funded ; Annual Charge ; and Sinking Fund Operations—distinguishing the whole period into terms of years.—(Compiled principally from Parl. Paper, No. 145, Session 1822.)*

1	2	3	4	5	6	7	8	9	10	11
MONEY RAISED.	Years.	Capitals Funded, and Rate Per Cent. of Capital for £100 Money.		Annual Charge on Capitals Funded.			SINKING FUND OPERATIONS.			Average Rate of Interest Paid on Money Raised.
				Divi- dends on Stock.	Long Annuity.	Total.	Portions of Loans paid over to Sinking Fund.	Dividends on Stock Purchased by Sinking Fund.	Stock of all kinds Purchased by Sinking Fund.	
		£	Per Cent	£	£	£	£	£	£	£ s. d.
4,53	1793	6,25	139	19	....	19	1,63	6	2,17	4 4 6
12,91	1794	15,67	121	54	6	60	1,87	8	2,80	4 13 .
42,09	1795	55,54	132	1,99	14	2,13	2,14	10	3,08	5 1 3
42,76	1796	56,94	133	2,25	2	2,27	2,64	13	4,39	5 6 .
14,62	1797	29,02	198	89	4	93	3,36	20	6,71	6 7 .
116,88	(93-97)	163,42	139	5,86	26	6,12	11,64	57	19,15	5 4 7
18,00	1798	35,62	197	1,07	3	1,10	3,98	23	7,86	6 2 3
12,50	1799	21,87	175	65	....	65	4,29	21	7,22	5 4 .
18,50	1800	29,04	157	87	....	87	4,62	22	7,31	4 14 .
34,41	1801	55,95	162	1,77	....	1,77	5,12	25	8,09	5 2 9
23,00	1802	30,35	131	90	1	91	5,68	24	7,73	3 19 .
106,41	(98-02)	172,83	162	5,26	4	5,30	23,69	115	38,21	4 19 5
223,29	'93-'02	336,25	150	11,12	30	11,42	35,33	172	57,36	5 2 2
10,00	1803	16,00	160	48	3	51	6,02	31	10,53	5 2 .
10,00	1804	18,20	182	54	....	54	6,52	34	11,39	5 8 .
21,52	1805	39,54	183	1,14	....	1,14	7,18	37	12,23	5 5 10
18,00	1806	29,88	166	89	....	89	7,83	38	12,81	4 18 10
59,52	(03-06)	103,62	173	3,05	3	3,08	27,55	140	46,96	5 3 4

TABLE I.—Continued.

1	2	3	4	5	6	7	8	9	10	11
Money raised.	Years.	Capitals Funded, and Rate Per Cent. of Capital for £100 Money.		Annual Charge on Capitals Funded.			Sinking Fund Operations.			Average Rate of Interest Paid on Money Raised.
				Dividends on Stock.	Long Annuity.	Total.	Portions of Loans paid over to Sinking Fund.	Dividends on Stocks purchased by Sinking Fund.	Stock of all kinds Purchased by Sinking Fund.	
		£	Per Cent	£	£	£	£	£	£	£ s. d.
12,20	1807	18,37	150	58	....	58	8,91	42	14,17	4 15 .
12,00	1808	13,69	114	59	....	59	9,55	43	13,96	4 18 2
19,53	1809	22,17	113	90	5	95	10,17	45	14,35	4 17 2
16,31	1810	19,81	121	76	....	76	10,81	48	15,66	4 13 4
24,00	1811	29,24	121	1,15	4	1,19	11,54	54	18,15	4 18 .
84,04	(07-11)	103,28	122	3,98	9	4,07	50,98	232	76,29	4 16 10
27,87	1812	40,74	182	1,48	....	1,48	12,44	63	21,11	5 6 2
58,76	1813	93,73	159	3,14	9	3,23	14,18	72	24,12	5 9 10
18,50	1814	24,69	133	85	....	85	12,75	57	19,15	4 11 10
45,13	1815	70,89	157	2,58	....	2,58	11,90	61	20,28	5 14 .
3,00	1816	3,00	100	9	....	9	11,49	55	18,51	3 . .
153,26	(12-16)	233,05	152	8,14	9	8,23	62,76	308	103,17	5 7 5
296,82	1803-16	439,95	149	15,17	21	15,38	141,29	680	226,42	5 3 7
520,11	1793-1816	776,20	149	26,29	51	26,80	176,62	852	283,78	5 3 .
64,75	Irish Loans.	103,03	159	3,26	....	3,32	11,87	57	19,08	5 2 5
584,87	GENERAL TOTAL. }	879,29	150	29,61	51	30,17	188,52	917	302,91	5 3 .

Note.—In both Tables I. and II. it has been considered sufficient for the general purposes in view, and in order not to perplex the eye, to omit throughout the *four figures* at the *unit* end of each amount. Thus, 4,50 represents 4,500,000, and (in col. 6 & 7,) 6 represents 60,000, and 19 represents 190,000. In col. 9 also, 10 represents 100,000.

The next Table (II.) is of a more special character than the last. It was first inserted by Sir Henry Parnell in his work on Financial Reform, and was framed for the purpose of shewing that if all the Supplies after 1792 had been raised within the year the nation would have been able to carry on the whole of the contest for a cost of 377 Millions, instead of a cost of 429 Millions, which is the sum stated as actually obtained by Loan. The principle employed in the Table is to shew, first, in cols. 2, 3 and 4, the Expenditure required to pay for the services of each year, *plus* the annual charge of the Debt as it stood on *5th January*, 1793; and then inserting in col. 7 the Actual Net Revenue of each year, to deduce in the two last cols. (6 & 7) the excess of Revenue or of Expenditure.

It is then argued that in all those years in which upon the plan assumed, the Expenditure appears to be in excess, the amount of that excess was allowed by the system of the Loans to remain in the pockets of the public, to be employed by them in pursuit of profit.

A computation is then made of the accumulation, year by year, at the rate of 5 per cent., compound interest of all the Excesses of Expenditure and all the Excesses of Revenue, and the difference between the two is held to exhibit the result to the nation. For example:

	£
The Excesses of <i>Expenditure</i> 1792-1816, are given as amounting to 195,870,000 <i>l.</i> , and the accumulation of the yearly sums composing this total, reckoning 5 PER CENT. compound interest, would stand on 5th January, 1817 as.....	435,881,000
The Excesses of <i>Revenue</i> are given as 44,520,000 <i>l.</i> , and on a similar basis would stand at	57,930,000
Leaving....	377,851,000

as a sum for which, it is said, the whole expenses of the War might have been defrayed, had all the Supplies been raised within the year. And as the sum actually raised by Loans was 429 Millions, the balance against the Loan Method is said to be, say, 52 Millions.

It is admitted that this mode of viewing the case is purely hypothetical, and it seems also to be admitted that it would have been absolutely impossible to have raised year by year all the money required by means of current taxes. The hypothesis therefore can only be examined as such, and the whole inquiry can be regarded as no more than an exercise of ingenuity.

The whole of the formidable result however of the 52 Millions depends entirely upon the rate of interest being assumed to be 5 per cent. In point of actual fact that rate is too low. Money left in the pockets of the people from 1792 to 1816 was worth to them, and therefore to the nation, fully 6 per cent. per annum; and in support of this statement, reference may be made to the evidence given in 1822, before the Select Committee on the Usury Laws.

At Six per cent., therefore, and still adhering to the figures given in the Table—

	£
The Excesses of <i>Expenditure</i> would amount to	484,800,000
And the Excesses of <i>Revenue</i> to	38,200,000
	446,600,000
Money obtained as Loans.....	429,000,000
Leaving	17,000,000

as a balance in *Favour* of the Loan Method.

And this result is every way as conclusive, in its way and degree, as the more formidable result of the 52 millions. How far either of the tests can be said to have any practical value I leave others to determine. The following is the Table:—

TABLE II.—INCOME AND EXPENDITURE, 1792-1816, showing the results which would have taken place if the FUNDED DEBT had not been increased after 1792; in other words, if all the Supplies had been raised within the Year. (Compiled principally from Returns laid before the Finance Committee, of which Sir Henry Parnell was Chairman.)

1.	2.	3.	4.	5.	6.	7.
Years.	EXPENDITURE.			NET REVENUE, exclusive of Loans.	Excess of	
	Interest on Total Debt as it stood 5th January, 1793.	Expenditure for War, Colonies, Home Govern- ment, &c.	Total Expenditure.		Expendi- ture.	Revenue.
	£	£	£	£	£	£
1792	9,62	7,67	17,29	19,26	....	1,96
1793	9,62	14,76	24,38	19,84	4,53	....
1794	9,62	19,70	29,32	20,19	9,13	....
1795	9,62	34,30	43,92	19,88	24,04	....
1796	9,62	45,81	55,43	21,45	33,98	....
1797	9,61	36,20	45,82	23,12	22,69	....
(92-97)	57,71	158,44	216,16	123,74	94,37	1,96
1798	9,61	33,28	42,89	31,03	11,85	....
1799	9,61	38,16	47,78	35,60	12,17	....
1800	9,61	39,07	48,68	34,14	14,54	....
1801	9,61	40,69	50,30	34,11	16,18	....
1802	9,61	29,61	39,21	36,37	2,85	....
(98-02)	48,05	180,81	228,86	171,25	57,59	....
(1792-1802)	105,76	339,25	445,02	294,99	151,96	1,96
1803	9,58	28,29	37,87	38,61	....	74
1804	9,58	37,87	47,45	46,17	1,28	....
1805	9,55	44,76	54,31	50,90	3,42	....
1806	9,54	45,48	55,02	55,79	....	77
(03-06)	38,25	156,40	194,65	191,47	4,70	1,51
1807	9,52	43,97	53,49	59,34	....	5,84
1808	9,10	49,82	58,92	62,50	....	3,57
1809	9,10	52,27	61,38	63,72	....	2,34
1810	9,10	52,55	61,65	67,14	....	5,49
1811	9,10	58,64	67,75	65,17	2,57	....
(07-11)	45,92	257,25	303,19	317,87	2,57	17,24
1812	9,10	60,60	69,70	65,04	4,67	....
1813	9,10	77,40	86,51	68,75	17,76	....
1814	9,10	76,23	85,32	71,13	14,19	....
1815	9,10	60,56	69,66	72,21	....	2,55
1816	9,10	31,91	41,00	62,26	....	21,26
(12-16)	45,50	306,70	352,19	339,39	36,62	23,81
(1803-16)	129,67	720,35	850,03	848,73	43,89	42,56
1792-1816	235,43	1,059,60	1,295,05	1,143,72	195,87	44,52

R.—General Observations on the Contents of some of the Appendices.

IN framing the several Appendices, I have endeavoured to accompany them with such comments as appeared to be necessary to remove any ambiguity as regards the more immediate purpose of the figures they contain. It will be convenient, however, to avail myself of the final pages of the Paper to introduce some statements which could not be inserted with equal propriety elsewhere.

And referring in the first instance to the monthly Prices of Stocks, given in Appendix (M), I would draw attention to the circumstance of the great relative depreciation of 4 and 5 per cents. as compared with 3's in 1791, and still more decidedly in 1792. The rise of the 3 per cents. to 97, in February, 1792, led to an expectation that the 5's, and most probably the 4's, would be reduced. Peculiar circumstances prevented such a measure being adopted; but what was considered the narrow escape of the 4's and 5's from reduction in the summer of 1792 operated, to the prejudice of High Rate Stocks, for sometime after the commencement of the War. When the 3 per cents. fell to 60 and 50, it was but natural that the former difference between the market prices of 3's and 5's should be materially diminished. No depression of the 3's, however, sufficed to remove that difference wholly; and it will be seen that even from October, 1797, to September, 1798, during which time the 3 per cents. were under 50, there was still a relative depreciation of 4's of not less than 7 per cent., and of 5's of not less than 10-12 per cent. The extent and frequency of the actual dealings in the market in the 4's, and 5's, and in Long Annuities were exceedingly limited compared with the dealings in Consols, and it is not at all unusual to find several months in succession, during which there is not more than, perhaps, a single quotation in each of these descriptions of security.

In the early part of the War the Long Annuities had, say, 65 years to run—and that was a term so extended as to affect the security but little in practical value on the mere ground of its terminable character. And even when the Income-tax of 10 per cent. was imposed in 1799, the Long Annuities had still 61 years unexpired, and the Tax, therefore, did not affect them in any degree so oppressively as the present Income-tax has affected, for the last few years, the Long Annuities now in the market. During 1797 and 1798 the Long Annuities experienced a greater depression than any other kind of public security, and it will be seen that for the half-year, October, 1797 to March, 1798, they stood at 13 and 14 years purchase. There does not appear to be any reason for supposing that Mr. Pitt could have employed Long Annuities to any important extent as a method of funding for the loans he required.

With reference to the observations, at page 19 of the text, on the real meaning of the theory which prescribes borrowing at Par, it is necessary to point out, that so long as the Usury Laws were considered to be an essential part of our legislation, the legal limitation of the rate of interest to 5 per cent. per annum, would have been regarded as a bar to the creation of any public Stock bearing a higher rate than 5 per cent. Practically, therefore, the only course open to a Minister, determined to borrow only at Par, would have

been in Long Annuities, or in some other description of Annuities; and the highest rated Stock to which he could have had recourse would have been 5 per cents. There is, therefore, the more reason in favour of the course adopted in the Paper, namely, a course which tries the question between the Low Rate and High Rate methods by a comparison of 3 and 5 per cents.

The figures in Appendix G, relative to the course of the Import and Export Trade, before and after the opening of the War, are full of curious interest. It will be seen that, during the American War (1777-83), there was scarcely any increase in the volume of the external trade. During the first five years (1784-88) after the Peace of Paris the trade increased about 50 per cent., and a considerable part of that increase was with India, and comparing 1784, the first year of the Peace, with 1792, the last year of the Peace, there was an increase in 1792 of 70 or 80 per cent. As we have only the Official values to guide us we can do no more than speak in very general terms. After 1793, it will be seen that there was a rapid increase in the Transit Trade, that is, in the import and re-export of foreign merchandize. The great increase in the export of British manufactures did not begin till 1798, and generally it was not till after that year that the external trade of the country really entered upon that career of marvellous expansion which occurred during the last War. MacPherson makes several statements which indicate the enormous amount of the transfers of capital which took place to this country after it became apparent that it was the only safe asylum for property remaining in Europe.

It should be mentioned in connexion with the statement at page 22 of the difficulty of raising large supplies by taxes early in the War, that even Mr. Pitt's estimate of $7\frac{1}{2}$ millions as the produce of the 10 per cent. Income-tax was found to be very greatly beyond the sum actually obtained. It will be seen from Appendix D that the whole produce of the tax in 1800, the second year of its assessment, was under 5 millions.

The delay in the appearance of this Appendix in the Journal enables me now (July 1855,) to say that an actual calculation has afforded conclusive proof of the correctness of the statement contained at pages 133-4 *ante*, and in Appendix N. *seq.*, as regards the Comparative Results of the Ten Largest Loans of 1793-1801. The statement made in the passages referred to is in substance, that by assuming, for the sake of simplicity and readiness of calculation, a commuted date of 1st January, 1826, I have *understated* the arithmetical results in favour of my view. An actual calculation has now been made according to the actual facts in all their detail, and the conclusions presented by this calculation prove, beyond all question, that the statements at pages 133-4, and in Appendix N, are very considerably within the truth.

MISCELLANEA.

The British Association and Statistical Science.

[Extracts from the Earl of Harrowby's Inaugural Address to the British Association for the Advancement of Science, delivered at the Meeting in Liverpool on the 20th of September, 1854.]

I WILL now, with your permission, proceed to the consideration of some other departments of our work, such as Geography, Ethnography, and Statistics, which are more connected with my own pursuits, which, affected as they are by the character of man, the uncertainties of his will, and the accidents of his physical and moral nature, and thus being less the subjects of direct and pure experiment, seem at first sight to be hardly reducible to those fixed laws which it is the object of science to investigate and ascertain. For these reasons, indeed, among others, these branches of study formed at first no part of the scheme of the British Association, and there was some doubt about their subsequent admission.

Nevertheless, I rejoice that they were so admitted. The apprehension that they must introduce the spirit of party into our proceedings has been most honourably disappointed; and as one, who, in the capacity of a member of the legislature, have to act from time to time on the subject of some of their inquiries, I cannot but express my gratitude for the assistance which they have afforded, both by informing and forming the public mind on many important questions; and, above all, for the lesson they have taught on the importance of testing every theory by a patient collection and impartial discussion of the facts; in a word, for having imported the spirit of science into what, in the largest sense of the word, may be called politics, instead of importing the spirit of politics, in its narrower sense, into science.

What is more important than to rescue questions of this nature, such as Finance and Political Economy, for instance, in some degree at least, from the domain of party contention? And how can we better contribute to that desirable result, than by discussing the carefully collected facts in a scientific spirit on an arena within which no party passion is excited, no party allegiance is acknowledged, no party victory has to be lost or won, and when men are at liberty to convince and be convinced without risking a charge of treachery or a change of ministry as the consequence? But, in fact, these studies could not fairly have been excluded from our peripatetic university of science.

Who shall separate Political altogether from the influences of Physical Geography, or Ethnology from Physiology, or the destinies of man upon this globe from the study of his physical nature? By its employment of the doctrine of probabilities, one branch of statistics is brought into immediate contact with the higher mathematics, and the actuary is thus enabled to extract certainty in the gross out of uncertainty in the detail, and to provide man with the means of securing himself against some of the worst contingencies to which his

life and property are exposed. In fact, statistics themselves are the introduction of the principle of induction into the investigation of the affairs of human life:—an operation which requires the exercise of at least the same philosophical qualities as other sciences. It is not enough in any case merely to collect facts and reduce them into a tabular form. They must be analyzed as well as compared; the accompanying circumstances must be studied (which is more difficult in moral than in material investigations), that we may be sure that we are (that is to say, in reality calling the same things by the same names) treating of the same facts under the same circumstances; and all disturbing influences must be carefully eliminated before any such pure experiment can be got at as can fairly be considered to have established a satisfactory conclusion. In some cases this is easier than in others. In regard to the probabilities of life or health, for instance, there are, at least, no passions or prejudices, no private interests at work, to interfere with the faithful accumulation of the facts, and if they be numerous enough, it might be supposed that their number would be a sufficient protection against the effect of any partial disturbances. But even here, caution, and special, as well as extensive knowledge, are required. There are disturbing influences even here,—habits of life, nature of employment, immigration or emigration, ignorance or mis-statement of age, local epidemics, &c., which leave sources of error in even the most extended investigations. Still results are attained, errors are more and more carefully watched against, and allowed for, or excluded, and more and more of certainty is gradually introduced. And here I should not omit to notice the valuable services of the Institute of Actuaries not long ago established, and who are represented in our Statistical Section. They discuss all questions to which the science of probability can be applied; and that circle is constantly extending:—assurance in all its branches, annuities, reversionary interests, the laws of population, mortality, and sickness; they publish Transactions; and what is of the greatest importance in this, as indeed in any branch of inductive science, they hold an extensive correspondence with foreign countries. In fact, they are doing for the contingencies of human life, and for materials apparently as uncertain, something like what Meteorology is doing for the winds and waves.

What shall I say to the statistics of crime, of education, of pauperism, of charity, at once and reciprocally the effect and the cause of that increasing attention to the condition of the people, which so favourably distinguishes the present age? Who can look at the mere surface of society, transparently betraying the abysses which yawn beneath, and not desire to know something of their secrets, to throw in the moral drag, and to bring to the light of day some of the phenomena, the monstrous forms of misery and vice which it holds within its dark recesses?—and who can look at these things, no longer matter of conjecture, but ascertained, classed, and tabled, without having the desire awakened or strengthened to do something towards remedying the evils thus revealed, and without feeling himself guided and assisted towards a remedy? Yet here, more than in other cases, should a man suspect himself; here should

he guard himself against hasty conclusions, drawn from the first appearance of the results; for here are disturbing influences most busily at work, not only from without, but from within,—not only in the nature of the facts themselves, but in the feelings, passions, prejudices, habits, and moral constitution of the observer.

Still the tabling of the facts is of infinite importance. If they disturb, as they are sure to do, some feeling, some prejudice, some theory, some conviction, it will be felt, that any how the facts have to be accounted for; further investigation will follow; and if it appear that no correction is required, the truth will be established, and the hostile theory will, sooner or later, give way and disappear. In these things it is, of course, more than usually important that the facts to be selected for collection should be such as are, in their own nature and under the circumstances, likely to be ascertained correctly, and that the business of collection should be in the hands of those who have no bias to do it otherwise than fairly, no interest in the result; and this was, I believe, kept studiously in view by those who had the management of our great statistical work, the recent Census of our own country, which we are still studying; but, whether they were successful or not, in this respect, has already become matter of discussion.

The work itself is, undoubtedly, one of the greatest monuments that has ever been presented to a nation, as a record of its own constituent elements and conditions; compiled and commented on with singular industry, judgment, acuteness, and impartiality,—the Domesday-book of the *people* of England, as the great volume of the Conqueror was of its *surface*.

Nor can I, while speaking of statistics, avoid referring to the Statistical Congress which took place at Brussels, about this time last year; which had mainly for its object to produce uniformity among different nations in the selection of the facts which they should record, and in the manner of recording them; without which, indeed, no satisfactory comparisons can be established, no results can safely be deduced. To bring about such an uniformity absolutely is, I am afraid, hopeless; inasmuch as the grounds of difference are, in many cases, so deeply imbedded in the laws, the institutions, and the habits of the different countries, that no hammer of the statist is likely to remove them.

To understand, however, the points of difference, even if they are not removed, is, in itself, one great step towards the object. It at least prevents false conclusions, if it does not fully provide the means of establishing the true ones. It gets rid of sources of error, even if it fail of giving the full means of ascertaining truth. Take, for instance, the case of criminal statistics. We wish to ascertain the comparative prevalence of different crimes, either at different times or in different countries. For this purpose must we not know under what heads the jurists and statisticians of the times or countries to be compared array the various offences which are recorded; with what amounts of penalty they were visited; and with what rigour, from time to time, the penalties were enforced?

That which is called manslaughter in one country, and assassination in another, is called murder in a third. That which, in one

country is punished with death, in another is visited by imprisonment. The bankruptcy which in one country is a crime, in another is a civil offence. The juvenile offences which in one country are punished by imprisonment, and swell the criminal calendar, in another are treated, as they should in many cases be, only as a subject of compassion and correction,—take no place in the criminal calendar at all.

Indeed, it is one of the difficulties which beset a large proportion of these investigations, whether into morals, health, education, or legislation, and which must always distinguish them from those which deal either with matter or defined abstractions, that, in using the same terms, we are often uncertain whether we mean the same thing; whether, in fact, when we are using the same denominations the same weights and measures are really employed. Such conferences, however, as those of Brussels tend much to limit the extent of error.

Among the objects which may best occupy the attention of the Statistical Section, at the present moment, will be the discussion of a decimal coinage, and the statistics of agricultural produce. It is important in regard to both, that by previous sifting and discussion not only the best conclusion should be arrived at, but the subject should be so familiarized to general apprehension as to secure the widest co-operation. In regard to a change in the coinage, the interests and feelings of the lower classes must be especially consulted; and, with this view, without expressing any ultimate opinion, I would recommend to those who are considering the question, the perusal of a pamphlet, full of important matter, by the late Mr. Laurie, the work of the last hours of a man of eminent knowledge and virtue, which he had hoped to be able to communicate in person, as a paper, to the present Meeting. With regard to the statistics of agriculture, the main object is to procure such a knowledge of the facts as shall guide the operations of the consumer and the merchant. I would suggest that they should be taken and published at two periods of the year, once in the spring, recording the extent of soil devoted to each kind of grain,—a fact easily ascertained; the second time as soon as the harvest is concluded,—announcing the amount of the crop, as ascertained on several specimen fields under different circumstances of soil and climate, and applying it in due proportion as a multiple to the acreage already published. A really accurate census of the harvest is, I believe, impracticable, at least within the period which would alone make it valuable for present use; and the approximation which I have suggested would, I conceive, be adequate to the purpose.

**THE MARRIAGES, BIRTHS, AND DEATHS,
REGISTERED IN THE DIVISIONS, COUNTIES, AND DISTRICTS OF ENGLAND.**

The Marriages for the Quarter ended December, 1851, and the Births and Deaths for the Quarter ended March, 1855,

AS PUBLISHED BY AUTHORITY OF THE REGISTRAR-GENERAL.

This return comprises the births and deaths registered by 2,196 registrars in all the districts of England during the Winter quarter that ended on March 31st, 1855; and the marriages in 12,110 churches or chapels, about 3,594 registered places of worship unconnected with the Established Church, and 627 superintendent registrars' offices, in the quarter that ended on December 31st, 1854.

The general result of the returns is of a mixed character; for from the excessively cold weather the mortality of the quarter is the highest on record since the commencement of the registration, while the births and marriages are above the average numbers of the seasons.

MARRIAGES.—47,666 marriages were celebrated, or 95,332 persons were married, in the last quarter of the year 1854. Although the number is less than the number for the corresponding quarter of 1853, it exceeds the average. The marriages in the year 1854 were at the rate of 856 in every 100,000 of the population, and at the rate of 1·013 in the quarter which includes Christmas, and is the season in which there is the greatest predilection for marriage in England.

The marriages have fallen off in London, in the parts of Kent round Maidstone, in Portsmouth, Plymouth, and the seaports, which have been affected by the absence of seamen in the war; in Northamptonshire, Huntingdonshire, Cornwall, Shropshire, Staffordshire, Worcestershire, Warwickshire, Yorkshire, Cumberland, and Westmorland. The marriages in Manchester and Ashton declined, but in the aggregate the marriages in Lancashire were not below the average.

Marriages, Births, and Deaths, returned in the Years 1843-55 and in the Quarters of those Years.

YEARS.....	1843	1844	1845	1846	1847	1848	1849	1850	1851	1852	1853	1854	1855
Marriages	123818	132249	143743	145664	135845	138230	141883	152744	154206	158782	164021	159349	...
Births	527325	540763	543521	572625	539965	563059	578159	593423	615863	621012	612377	634506	...
Deaths	346445	356933	349866	390315	423304	399833	440839	368995	395396	467138	421867	438239	...
MARRIAGES.													
Quarters ended the last day of													
March	25285	26387	29551	31417	27480	28398	28429	30567	32724	32977	35011	33114	...
June	31113	34268	35300	37111	35197	34721	35844	39204	38635	40092	40335	40389	...
September	28847	31675	35003	35070	32439	32995	33874	37636	37316	38400	39766	38150	...
December	38573	39919	43889	42066	40729	42116	43736	45337	45531	47313	48886	47666	...
BIRTHS.													
March	136837	143578	143080	145108	146453	139736	153772	144551	157286	161803	161634	160892	166186
June	131279	136941	136853	149450	139072	149760	153693	155865	159073	159031	158718	172420	...
September	128161	130078	132369	138718	127173	140359	135223	146911	150594	151222	147581	154735	...
December	131048	130166	131219	139349	127267	133204	135471	146095	148912	151956	144444	146459	...
DEATHS.													
March	94926	101024	104664	89184	119672	120032	105870	98430	105359	106358	118273	111970	134605
June	87234	85337	89149	90230	106718	99727	102153	92871	99458	100625	107861	102666	...
September	76792	79708	74872	101664	93435	87638	135227	85849	91499	100385	92332	113939	...
December	87493	90864	80681	108937	103479	92436	97589	91815	99080	99770	103341	109664	...

* The numbers up to 1851 have appeared in the Annual Reports.

BIRTHS.—166,186 children who were born alive had their names inscribed on the registers in the three months of January, February, and March. This number exceeds by twenty thousand the number that appears in the return for the preceding quarter, and by five thousand the numbers in the return for the corresponding first quarter of 1854. The rate of births was 3·60 per cent. The increase of births is chiefly in London, in the West Midland Counties, in the Northern Counties, and in Wales.

INCREASE OF POPULATION.—As the number of births was 166,186, and of the deaths 134,605, the excess indicates that the natural increase of the population was 31,581 in the first three months of the present year. In the same period 36,677, or, exclusive of 2,217 foreigners, 34,460 emigrants, left the ports of the United Kingdom at which the Government has Emigration officers. About 15,806 of the emigrants were of English origin; so that the natural increase by births would be diminished to this extent, if there were no compensating immigration of the Irish and Scottish population into England.

The emigration from the United Kingdom to the United States has fallen from 51,929 in the winter of 1851 to 36,067 in the winter quarters of 1854, and 18,427 in the corresponding quarter of the present year. The emigrants to the Australian colonies were, in the quarters that ended on March 31st, 1,003 in 1847, 2,942 in 1851, and 17,444 in 1855. The remarkable diminution in the number of emigrants from Ireland to the United States deserves attention.*

England :—Annual Rate per cent. of Marriage, Birth, and Death, during the Years 1845-55, and the Quarters of those Years.*

Estimated Population of England in thousands in the middle of each Year.....	16721	16925	17132	17340	17552	17766	17983	18206	18403	18616	...	
YEARS	1845	1846	1847	1848	1849	1850	1851	1852	1853	1854	Mean, 1845-54	1855
Marriages.....	·860	·861	·793	·797	·808	·860	·858	·872	·891	·856	·846	...
Births.....	3·251	3·383	3·152	3·247	3·294	3·340	3·425	3·428	3·328	3·408	3·326	...
Deaths.....	2·089	2·306	2·471	2·306	2·512	2·077	2·199	2·236	2·292	2·354	2·284	...
MARRIAGES.												
Quarters ended the last day of												
March.....	·721	·757	·655	·661	·661	·702	·742	·730	·775	·726	·713	...
June.....	·849	·852	·826	·805	·822	·888	·864	·885	·880	·872	·857	...
September.....	·830	·822	·751	·755	·766	·840	·822	·836	·856	·812	·809	...
December.....	1·038	·953	·940	·961	·986	1·010	1·000	1·027	1·050	1·013	1·001	...
BIRTHS.												
March.....	3·491	3·498	3·488	3·252	3·575	3·321	3·567	3·582	3·576	3·523	3·457	3·602
June.....	3·291	3·551	3·265	3·474	3·523	3·530	3·557	3·509	3·464	3·722	3·489	...
September.....	3·140	3·251	2·945	3·211	3·056	3·281	3·317	3·291	3·177	3·294	3·196	...
December.....	3·103	3·256	2·938	3·038	3·053	3·253	3·270	3·298	3·101	3·111	3·142	...
DEATHS.												
March.....	2·554	2·157	2·850	2·794	2·462	2·261	2·388	2·354	2·617	2·452	2·489	2·918
June.....	2·144	2·144	2·506	2·313	2·341	2·107	2·224	2·221	2·354	2·216	2·257	...
September.....	1·776	2·382	2·163	2·005	3·057	1·917	2·015	2·165	1·988	2·425	2·191	...
December.....	1·908	2·545	2·389	2·108	2·199	2·045	2·176	2·165	2·219	2·330	2·208	...

* The table may be read thus, without reference to the decimal points:—In the year 1845, to 100,000 of the population of England there were 797 marriages, 3,247 births, and 2,066 deaths registered. The annual rates of marriage in each of the four quarters were ·661, ·805, ·755, and ·961 per cent.; the rates of death 2·794, 2·313, 2·005, and 2·108 per cent. In reading the population on the first line add three ciphers (000). The three months January, February, March, contain 90, in leap year 91 days; the three months April, May, June, 91 days; each of the two last quarters of the year 92 days. For this inequality a correction has been made in the calculation.

* From a Return with which the Registrar-General has been favoured by the Emigration Commissioners.

THE PRICES OF PROVISIONS, AND THE WEATHER.—The cost of food and the state of trade influence the number of the births, deaths, and marriages, and, as well as the weather, produce great changes in the condition of the population. The price of wheat has been more than 50 per cent. higher than it was in the quarter of 1853 that ended on March 31st, but 9s. 7d. per quarter lower than it was in the beginning of 1854. Beef is 25 per cent. dearer than it was in 1853, and 7 per cent. dearer than it was in 1854. Mutton has been cheaper than it was in 1853, and so have been potatoes. The meteorology, and all the peculiar characteristics of the severe weather, are described by Mr. Glaisher, p. 295.

The Average Prices of Consols, of Wheat, Meat, and Potatoes, also the Average Quantity of Wheat sold and imported Weekly, in each of the nine Quarters ended March 31st, 1855.

Quarters ended	Average Price of Consols (for Money.)	Average Price of Wheat per Quarter in England and Wales.	Wheat sold in the 290 Cities and Towns in England and Wales making Returns.	Wheat and Wheat Flour entered for Home Consumption at Chief Ports of Great Britain.	Average Prices of Meat per lb. at Leadenhall and Newgate Markets (by the Carcase).		Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.
			Average Number of Quarters weekly.		Beef.	Mutton.	
1853	£						
Mar. 31.	99 $\frac{5}{8}$	45s. 7d.	95,115	63,530	3 $\frac{3}{4}$ d.—5 $\frac{1}{4}$ d. Mean 4 $\frac{1}{2}$ d.	4 $\frac{3}{4}$ d.—6 $\frac{3}{4}$ d. Mean 5 $\frac{3}{4}$ d.	110s.—145s. Mean 127s. 6d.
June 30.	100 $\frac{1}{8}$	44s. 6d.	84,559	82,623	4d.—5 $\frac{3}{4}$ d. Mean 4 $\frac{7}{8}$ d.	5d.—6 $\frac{3}{4}$ d. Mean 5 $\frac{7}{8}$ d.	110s.—145s. Mean 127s. 6d.
Sept. 30.	97	51s. 10d.	86,087	120,020	4 $\frac{1}{4}$ d.—6d. Mean 5 $\frac{1}{8}$ d.	5d.—7 $\frac{1}{4}$ d. Mean 6 $\frac{1}{8}$ d.	110s.—125s. Mean 117s. 6d.
Dec. 31.	93 $\frac{5}{8}$	69s. 10d.	79,002	91,627	4d.—6d. Mean 5d.	4 $\frac{1}{4}$ d.—7d. Mean 5 $\frac{3}{8}$ d.	135s.—165s. Mean 150s.
1854							
Mar. 31.	91	79s. 6d.	60,022	103,519	4 $\frac{1}{4}$ d.—6 $\frac{1}{4}$ d. Mean 5 $\frac{1}{4}$ d.	4 $\frac{1}{2}$ d.—7d. Mean 5 $\frac{3}{4}$ d.	120s.—160s. Mean 140s.
June 30.	88 $\frac{5}{8}$	78s. 4d.	55,842	103,331	4 $\frac{1}{2}$ d.—6 $\frac{1}{4}$ d. Mean 5 $\frac{3}{8}$ d.	4 $\frac{3}{4}$ d.—6 $\frac{3}{4}$ d. Mean 5 $\frac{3}{4}$ d.	137s.—172s. Mean 155s.
Sept. 30.	93 $\frac{7}{8}$	63s. 10d.	56,389	48,135	4 $\frac{3}{4}$ d.—6 $\frac{3}{4}$ d. Mean 5 $\frac{3}{4}$ d.	5d.—7d. Mean 6d.	75s.—85s. Mean 80s.
Dec. 31.	93 $\frac{5}{8}$	68s. 0d.	128,783	19,513	4 $\frac{1}{2}$ d.—6 $\frac{3}{4}$ d. Mean 5 $\frac{5}{8}$ d.	5d.—7d. Mean 6d.	95s.—105s. Mean 100s.
1855							
Mar. 31.	91 $\frac{7}{8}$	69s. 11d.	88,000	33,821	4 $\frac{3}{4}$ d.—6 $\frac{1}{2}$ d. Mean 5 $\frac{5}{8}$ d.	4 $\frac{3}{4}$ d.—6 $\frac{1}{2}$ d. Mean 5 $\frac{5}{8}$ d.	105s.—120s. Mean 112s. 6d.
Col.	1	2	3	4	5	6	7

Note.—The total number of quarters of wheat sold in England and Wales for the 13 weeks ended March 31st, 1853, 1,236,493; for the 13 weeks ended June 30th, 1853, 1,099,261; for the 13 weeks ended September 30th, 1853, 1,119,128; for the 14 weeks ended December 31st, 1853, 1,106,027; for the 13 weeks ended March 31st, 1854, 780,282; for the 13 weeks ended June 30th, 1854, 725,916; for the 13 weeks ended September 30th, 1854, 733,059; for the 13 weeks ended December 31st, 1854, 1,674,173; and for the 13 weeks ended March 31st, 1855, 1,143,999. The total number of quarters entered for Home Consumption was, respectively, 825,886; 1,074,095; 1,560,255; 1,191,149; 1,345,743; 1,343,305; 625,755; 253,669; and 439,676.

Columns 2, 3, and 4 are compiled from the official returns published in the London Gazette; columns 1, 5, 6, and 7 are derived from the London market returns published in the Economist.

STATE OF THE PUBLIC HEALTH.—The health of the population generally has been bad; and the mortality has greatly exceeded the average. 134,605 deaths have been registered, which is 20,000 in excess of the corrected average of the winter quarters. This addition to the ordinary mortality of winter, which is in England the most fatal season, is referable to the low temperature, with the consequent hard times, against which it is difficult for the poorer classes to make an adequate provision; and in other countries, where there is no such system of relief as is administered under the English poor law, the suffering and the mortality are much greater in severe seasons than they are in England.

Persons of advanced ages among all classes have been cut off in great numbers, and have thus fallen before they had passed through the evening of life. Young children have also died in considerable numbers. Bronchitis and the congestive diseases of the lungs have been the immediate causes of death. The frost, which braces the nerves of the hardy and strong, chills the veins of the aged and weakly. The temperature of the night falls, as Mr. Glaisher shows, 11° on an average below the temperature of the day; and it is in the night undoubtedly that the respiratory organs are most frequently injured, when the water freezes in the bedrooms of houses that are not warmed by fires, or by warm air diffused by Dr. Arnott's and other admirable inventions.

The mortality in the country districts was at the annual rate of 26 deaths in 1,000 living; in the town districts at the rate of 32 in 1,000 living; out of equal populations, there were six funerals in the towns to every five funerals in the country districts; and the town population is increasing by immigration much faster than the country population; so that, unless measures for the improvement of the health of the artisans, the tradesmen, and the professional and wealthy classes in towns, are immediately adopted, the lives of many, and the vigor and energies of large masses of the English population, will be lost, or for ever impaired.

Deaths in the Winter Quarters.

	1815	1846	1847	1848	1849	1850	1851	1852	1853	1854	Total 1845-54	1855
In 117 Districts, comprising the chief towns.....	49996	43550	56105	57710	51017	46066	52333	52408	57092	56300	522877	61896
In 511 Districts, comprising chiefly small towns and country parishes.....	51668	45634	63567	62322	54853	52364	53026	53950	61181	55670	557235	69709
Total.....	104664	89184	119672	120032	105870	98430	105359	106358	118273	111970	1080112	134605

Population, Deaths, and Mortality per cent. in the Winter Quarters, 1845-55.

	Population Enumerated.		Deaths in 10 Winter Quarters, 1845-54.	Annual Rate of Mortality of 10 Winter Quarters, 1845-54.	Annual Rate of Mortality in the Winter Quarter 1855.
	June 6-7th, 1841.	March 31st, 1851.			
In 117 Districts, comprising the chief towns.....	6,612,958	7,886,473	522,877	2.724	3.199
In 511 Districts, comprising chiefly small towns and country parishes.....	9,301,190	10,041,136	557,235	2.246	2.632
All England.....	15,914,148	17,927,609	1,080,112	2.489	2.918

The 131,605 deaths do not include deaths that have occurred at sea during the quarter, and have been entered upon the marine register, neither do they include the deaths among our soldiers abroad, as no provision has yet been made for placing the names of the men who die in the service of their country abroad, on the national registers.

The excess of mortality in the quarter is diffused over the whole kingdom; nor is it evident that the northern have suffered more than the southern counties. The deaths in London exceeded by 3,222, or one-fifth part, the deaths in the winter quarter of 1854; the deaths in the rest of England were 19,413, or nearly in the same degree in excess of that season. In the South-Eastern Counties the deaths were 11,253 in the place of 8,446. The Epsom district suffered from scarlatina; Guildford from small-pox and measles; Farnham from fever, measles, whooping-cough, and diarrhoea. The deaths, for the first time, exceed the births in Farnham. In the Bexley sub-district, in Kent, there were as many as forty cases of small-pox at one time: only those unvaccinated died. Scarlatina prevailed in Folkstone, Elham, Portsmouth, the Isle of Wight, Kintbury, Faringdon, and Fyfield. In the barracks at Winchester, occupied by about 2,000 men, chiefly recruits and invalid depôts, 40 men have died, chiefly of acute pulmonary complaints. 46 deaths occurred in the new military hospital, Portsea. Small-pox, imported, it is believed, by the Essex Rifles, was the cause of 6 deaths in Windsor, where also 2 children died in February of choleraic diarrhoea in a cleanly country cottage.

The South Midland Counties suffered from scarlatina and fever in several districts. In Oxford 25 deaths occurred from small-pox, and the deaths exceeded the births in number. In Cambridge the mortality was high. In Leighton Buzzard the deaths were nearly double the average.

In some districts of the Eastern Counties measles, small-pox, and whooping-cough prevailed. The mortality was high in Norwich and several other places, but the mortality was not more than a sixth part higher than it was in 1853. The mortality in the South-Western Division, where the climate is milder, rose to the same extent. In Salisbury the deaths in the winter quarters of 1853 and 1855 were 77 and 78; and the same result is noticeable in districts all over the country, which must have been exposed to nearly the same degree of cold as the districts in which the cold winter proved most fatal. Cold, under the shelter of houses in civilized states, only destroys people indirectly, by inducing diseases; is chiefly fatal to the aged or feeble; and it arrests some classes of diseases; so that, under certain circumstances, the mortality of a district may be lower in a cold than it is in a mild winter.

Influenza was epidemic in Saint Agnes, Truro; typhus in Lerrin, Liskeard; Plymouth and the surrounding districts are still in an unsatisfactory sanitary state. In Bath, Clifton, and Cheltenham, the mortality was above the average.

The West Midland Counties suffered somewhat less than the counties of the previous division. The mortality was high in Hereford, where measles was epidemic, and somewhat above the average in Gloucester, Shrewsbury, Stafford, Worcester, and Warwick. 2,101 deaths were registered in Birmingham and Aston; 103 less than the deaths in the winter quarter of 1854, but 359 more than the deaths in the winter quarter of 1853.

In the North Midland Counties the mortality was raised to nearly the same extent (one-seventh) as in the other Midland Counties; the districts of Leicester, Lincoln, Nottingham, and Derby, exhibited little or no increase. Scarlatina, measles, and whooping cough prevailed extensively in Lincolnshire.

Cheshire exhibited no increase; Lancashire only a slight increase in the mortality. 3,678 deaths were registered in Liverpool and West Derby; 3,262 in Manchester and Salford; the latter number being considerably above the average.

Yorkshire suffered less than other divisions. In Leeds and Hunslet, where 1,818 deaths were registered, the mortality was below the average of the place; and in Sheffield and York the mortality was about the average.

Measles and scarlatina prevailed to some extent in the Northern Counties; but the mortality was not raised one-thirteenth part above the average. In Monmouthshire and Wales the same diseases were epidemic, and the mortality was raised about one-sixth above the mortality of the winter of 1853. The registrar of Wrexham says, "The severity of the winter, and the high price of provisions of all kinds, have had a considerable effect on the health of young and old people."

Marriages Registered in the Quarters ended 31st December, 1852-54; Births and Deaths Registered in the Quarters ended 31st March, 1853-55, in the Divisions of England.

DIVISIONS.	Area in Statute Acres.	Population, 1851.	MARRIAGES				BIRTHS				DEATHS	
			Registered in the Quarter ended the last Day of									
			December				March				March	
			1852.	1853.	1854.	1855.	1854.	1855.	1853.	1854.	1855.	
ENGLAND.....	37,324,915	17,927,609	47,313	48,886	47,666	161,634	160,892	166,186	118,273	111,970	134,605	
<i>Divisions.</i>												
I. London.....	78,029	2,362,236	7,097	7,287	6,997	21,167	22,289	22,821	16,013	16,383	19,605	
II. South Eastern Counties	4,065,105	1,628,386	3,988	3,948	3,677	13,891	13,594	13,669	9,432	8,446	11,253	
III. South Midland Counties	3,201,290	1,234,332	3,096	3,104	2,999	10,824	10,183	10,219	7,572	6,547	8,693	
IV. Eastern Counties.....	3,214,099	1,113,982	3,003	3,223	3,124	9,447	8,878	9,521	6,559	6,104	7,659	
V. South Western Counties	4,994,490	1,803,291	3,945	3,896	3,853	14,904	14,358	14,575	11,201	9,907	13,183	
VI. West Midland Counties	3,865,332	2,136,573	5,958	6,538	6,402	20,063	20,375	21,136	14,864	14,993	16,981	
VII. North Midland Counties	3,540,797	1,215,501	2,963	3,047	3,031	10,613	10,462	10,703	7,494	7,227	8,253	
VIII. North Western Counties	2,000,227	2,488,438	7,247	7,170	7,211	24,710	25,166	25,847	19,611	18,506	20,820	
IX. Yorkshire.....	3,654,636	1,789,047	5,063	5,358	4,856	17,274	16,598	17,374	11,649	11,194	12,268	
X. Northern Counties	3,492,322	969,125	2,113	2,261	2,404	8,895	8,677	9,759	6,025	5,568	6,813	
XI. { Monmouthshire and Wales	5,218,588	1,186,697	2,840	3,054	3,112	9,846	9,812	10,562	7,853	7,095	9,077	

On the Meteorology of England and Scotland during the Quarter ended March 31st, 1855. By JAMES GLAISHER, ESQ., F.R.S., *Sec. of the British Meteorological Society.*

From January 1st to January 9th the weather was very warm, and the mean daily excess of temperature was 11° nearly. On January 9th the temperature was as high as 50° , and on January 10th it decreased to 26° ; January 10th, 11th, 12th, and 13th, were days of average temperature; on the 14th a very cold period set in, and continued with great severity until February 24th; on some days, about the middle of February, the defect of temperature was as large as 15° , 16° , 17° , and 18° , on several consecutive days; and the mean daily defect for the 42 days ended February 24th was $9^{\circ}5$; this long period was followed by a few days differing but little from their average temperatures; but on March 6th the cold again set in, and continued, with the exception of the days from the 16th to the 20th, to the end of the month. The average daily defect amounting to 6° .

In January the temperature was as low as 13° and 14° at different places on different days. In February it was as low as 3° to 10° at many places in several instances. The lowest temperature experienced about London was 7° , but the extreme lowest temperature was noticed at Berkhamstead, on February 18th, and was $0^{\circ}8$; on the same night it was $2^{\circ}5$ at Belvoir Castle; and it was low everywhere.

The mean temperature of the air at Greenwich for the quarter ended February, constituting the three winter months, was $35^{\circ}2$, being $2^{\circ}5$ below the average of 84 years.

1855. Months.		Temperature of									Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
		Air.			Evaporation.		Dew Point.		Air— Daily Range.						Water of the Thames.
		Mean.	Diff. from Average of 84 Years.	Diff. from Average of 14 Years.	Mean.	Diff. from Average of 14 Years.	Mean.	Diff. from Average of 14 Years.	Mean.	Diff. from Average of 14 Years.	Mean.	Diff. from Average of 14 Years.	Mean.	Diff. from Average of 14 Years.
Jan.	34.9	−1.0	−3.5	33.8	−3.5	31.7	−3.5	7.8	−0.5	40.8	In. 200	−.025	Gr. 2.4	−0.2
Feb.	29.4	−8.9	−9.5	28.8	−8.5	26.7	−8.0	11.5	+0.8	35.0	.165	−.058	2.0	−0.6
Mar.	37.9	−3.0	−4.1	36.2	−4.9	33.6	−2.2	14.3	−0.2	...	.212	−.018	2.5	−0.2
Mean.....	34.1	−4.3	−5.7	32.9	−5.6	30.7	−4.6	11.2	0.0	...	.192	−.034	2.3	−0.3

1855. Months.		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal Move- ment of the Air.	Reading of Thermometer on Grass.			
		Mean.	Diff. from Average of 14 Years.	Mean.	Diff. from Average of 14 Years.	Mean.	Diff. from Average of 14 Years.	Amnt.	Diff. from Average of 40 Years.		Number of Nights it was			Low- est Read- ing at Night.
										At or below 30°.	Be- tween 30° and 40°.	Above 40°.		
Jan.	91	+ 2	In. 29.998	+ .271	Gr. 558	+ 9	In. 1.0	−0.8	72	21	6	4	18.0	43.2
Feb.	91	+ 4	29.593	−.177	557	+ 8	1.4	−0.3	75	21	7	0	10.0	35.0
Mar.	86	− 4	29.535	−.277	546	− 1	1.5	−0.1	102	22	9	0	15.8	35.0
Mean.....	89	− 3	29.709	−.061	554	+ 5	Sum 1.3	Sum −0.4	83	Sum 64	Sum 22	Sum 4	10.0	43.2

Note.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Meteorological Table, Quarter ended March 31st, 1855.

NAMES OF STATIONS.	Mean Pressure of Dry Air reduced to the Level of the Sea.	Mean Temperature of the Air.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Mean Daily Range of the Temperature.	Mean Monthly Temperature.	Range of Temperature in the Quarter.	WIND.		Mean Amount of Cloud.	RAIN.		Mean Degree of Humidity.
								Mean estimated Strength.	General Direction.		Number of Days on which it fell.	Amount collected.	
Jersey.....	in. 29.662	38.3	52.0	23.0	6.2	34.7	29.0	1.7	N.E. & E.	6.9	28	in. 7.8	91
Falmouth .....	....	39.4	59.0	16.0	9.7	33.0	43.0	1.8	N. & N.E.	7.3	38	8.1	...
Truro	29.647	38.5	55.0	10.0	12.1	35.7	45.0	1.4	E.	7.4	44	4.4	89
Teignmouth	29.686	36.9	55.0	20.0	8.5	28.2	35.0	0.6	N.E.	7.1	39	6.7	86
Exeter	29.701	36.8	55.0	14.0	12.2	32.7	41.0	2.3	E.	4.8	30	4.1	83
Newport.....	29.693	35.9	56.4	18.0	10.0	32.9	38.4	2.1	N.E.	7.7	32	5.4	86
Worthing	29.718	35.1	51.4	18.0	7.4	25.4	33.4	1.0	N.E.	6.4	31	3.0	87
Clifton	29.697	34.5	55.3	11.5	9.7	32.8	43.8	0.6	N.E.	7.1	46	4.0	90
Royal Observatory.....	29.685	34.1	57.8	11.1	11.2	35.6	46.7	...	N.E.	8.0	43	3.9	89
Somerset House.....	....	35.4	54.0	16.0	9.9	30.0	38.0	...	N.E.	...	...	...	85
Oxford	29.723	34.5	56.5	7.5	11.0	35.2	49.0	1.4	Var.	7.8	25	3.1	89
Royston	29.737	33.5	59.2	8.8	12.8	35.9	50.4	...	Var.	7.5	60	4.3	87
Bedford	29.727	34.6	55.7	7.5	9.6	33.6	48.2	1.2	N.E.	8.0	...	2.9	87
Norwich	29.717	32.9	56.0	6.0	10.4	32.2	50.0	...	N.E.	...	30	4.2	89
Derby	29.713	34.1	53.0	10.0	10.7	31.7	43.0	...	N.E.	...	32	2.8	88
Holkham	29.693	33.5	52.5	10.0	10.5	31.5	42.5	1.1	N.E.	6.9	37	5.5	91
Nottingham	29.745	33.8	53.7	6.1	11.4	32.9	47.0	0.7	E. N.E.	7.7	49	3.1	89
Gainsborough.....	29.730	33.9	51.0	5.0	8.5	30.7	46.0	0.3	Var.	6.7	33	3.7	81
Warrington	29.716	34.3	51.3	10.9	10.6	31.9	40.4	0.4	Var.	6.4	37	4.8	85
Liverpool	29.764	36.1	51.4	19.6	7.2	22.6	31.8	1.0	Var.	7.4	22	3.5	82
Wakefield	29.710	34.2	54.8	5.2	12.2	34.9	49.6	1.5	N.E. & W.	7.8	54	3.9	89
York	29.696	32.5	50.0	1.5	9.6	29.5	48.5	...	N.	...	...	3.7	91
Scarborough	29.733	34.8	54.0	16.5	6.4	22.8	37.5	...	N.E.	...	35	4.7	84
North Shields	29.782	34.1	51.7	7.0	7.5	26.8	44.7	2.3	Var.	6.8	58	11.2	92
Arbroath.....	29.758	32.8	50.0	4.0	11.7	30.3	46.0	0.9	N.W.	6.6	43	6.0	76

REVENUE.

An Abstract of the Net Produce of the Revenue of the United Kingdom in the Years and Quarters ended 30th June, 1854 and 1855; showing the Increase or Decrease thereof.—(Continued from page 195.)

Sources of Revenue.	Years ended 30th June.			
	1854.	1855.	Increase.	Decrease.
	£	£	£	£
Customs.....	20,284,369	21,242,795	958,426	....
Excise	15,206,380	16,976,397	1,770,017	....
Stamps	6,916,320	7,187,892	271,572	....
Taxes.....	3,160,665	2,937,239	....	223,426
Property Tax	6,376,500	11,456,171	5,085,671	....
Post Office.....	1,247,000	1,239,424	....	7,576
Crown Lands.....	325,000	270,572	....	54,428
Miscellaneous	960,572	901,904	....	58,668
Totals.....	54,470,806	62,212,394	8,085,686	341,098
			Net Increase £7,741,588	

Sources of Revenue.	Quarters ended 30th June.			
	1854.	1855.	Increase.	Decrease.
	£	£	£	£
Customs	5,221,445	5,465,466	244,021	....
Excise	3,978,299	4,613,568	635,269	....
Stamps	1,773,358	1,828,300	54,942	....
Taxes.....	1,515,304	1,316,400	....	198,904
Property Tax.....	1,976,355	2,177,889	201,534	....
Post Office.....	384,000	289,267	....	94,733
Crown Lands.....	65,000	63,000	....	2,000
Miscellaneous	160,326	325,772	165,446	....
Totals.....	15,074,087	16,079,662	1,301,212	295,637
			Net Increase £1,005,575	

An Account showing the Net Revenue and other Receipts of the Quarter ended the 30th of June, 1855; the Application of the same, and the Charge of the Consolidated Fund for the said Quarter, together with the Surplus or Deficiency upon such Charge.

<p>Surplus balance beyond the charge of the Consolidated Fund, for the quarter ended March 31st, 1855, viz. :—</p> <p>Great Britain £119,180</p> <p>Ireland 119,180</p> <hr/> <p>Net Income received in the quarter ended June 30th, 1855, as shown in page 297 16,079,662</p> <p>Amount received in part of Loan of £16,000,000 6,306,000</p> <p>Amount of Exchequer Bills (Ways and Means) issued in the quarter ended June 30th, 1855 1,740,000</p> <p>Amount received in the quarter ended June 30th, 1855, in repayment of advances for Public Works, &c. 335,633</p> <hr/> <p>24,580,475</p> <p>Balance, being the deficiency on the 30th June, 1855, upon the charge of the Consolidated Fund in Great Britain, to meet the Dividends and other Charges payable in the quarter to September 30th, 1855, and for which Exchequer Bills (Deficiency) will be issued in that quarter 3,306,423</p> <hr/> <p>£27,886,908</p>	<p>Amount applied out of the net income for the quarter ended June 30th, 1855, to redemption of Exchequer Bills (Deficiency) for the quarter ended March 31st, 1855 3,407,094</p> <p>Amount applied to redemption of Ways and Means Bills issued in the quarter ended March 31st, 1855 1,000,000</p> <p>Net amount applied to supply services in the quarter ended June 30th, 1855 :—</p> <p>Out of the Consolidated Fund £13,470,162</p> <p>Out of Exchequer Bills (Ways and Means) .. 1,740,000</p> <hr/> <p>15,210,162</p> <p>Charge of the Consolidated Fund for the quarter ended June 30th, 1855, viz. :—</p> <p>Interest of the Permanent Debt 5,961,624</p> <p>Terminable Debt 662,980</p> <p>Interest of Exchequer Bills (Deficiency) 6,535</p> <p>Ditto (Ways and Means) 7,519</p> <p>The Civil List 100,020</p> <p>Other charges on Consolidated Fund 334,331</p> <p>Advances for Public Works, &c. 245,736</p> <p>Ditto, Sardinian Loan 506,000</p> <hr/> <p>7,818,715</p> <p>Surplus Balance beyond the charge of the Consolidated Fund, for the quarter ended June 30th, 1855, viz. :—</p> <p>Great Britain 390,907</p> <p>Ireland 390,907</p> <hr/> <p>£27,886,908</p>
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CORN.

Average Prices of Corn per Imperial Quarter in England and Wales, during each Week of the Second Quarter of 1855; together with the Monthly and Quarterly Average—(Continued from p. 197.)

[Communicated by H. F. JADIS, Esq., Comptroller of Corn Returns.]

Weeks ended on a Saturday, 1855.		Weekly Average.					
		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
April	7	68 5	30 8	24 11	42 2	40 8	37 9
"	14	68 4	31 1	25 10	39 11	41 2	39 2
"	21	68 8	31 5	25 10	38 11	41 5	36 10
"	28	68 4	31 6	25 9	40 10	41 6	39 2
Average for April		68 5	31 2	25 7	40 5	41 2	38 2 $\frac{1}{4}$
May	5	69 5	31 3	26 0	38 0	41 7	33 7
"	12	73 4	31 10	26 11	40 9	43 2	40 2
"	19	76 1	32 5	27 9	41 3	44 5	42 4
"	26	76 10	32 11	28 1	41 5	45 2	40 3
Average for May		73 11	32 1	27 2	41 10	43 7	40 4
June	2	77 7	33 2	28 2	44 7	46 4	42 3
"	9	77 5	33 11	28 10	47 4	46 1	42 1
"	16	77 5	34 0	28 7	45 10	46 6	43 6
"	23	76 7	34 3	29 3	45 9	47 1	43 1
"	30	75 11	34 3	28 8	45 6	46 6	43 8
Average for June		76 11 $\frac{3}{4}$	33 11	28 8	45 9 $\frac{1}{2}$	46 6	42 11
Average for the Quarter		73 4 $\frac{3}{4}$	32 6	27 3	42 11	43 11 $\frac{1}{2}$	40 8

STOCKS AND SHARES.

Fluctuations in the Stock and Share Markets during the Months of April, May, and June, 1855.—(Continued from p. 197.)

Stocks and Shares.	Amt. of Share.	Amt. Paid.	Price on the			Highest Price during the Months of			Lowest Price during the Months of		
			2 April.	2 May.	1 June.	April.	May.	June.	April.	May.	June.
Consols	...	...	92 $\frac{1}{2}$	88 $\frac{1}{2}$	91 $\frac{1}{2}$ x. d.	92 $\frac{1}{2}$	92 $\frac{1}{2}$	92	88 $\frac{1}{2}$	88 $\frac{1}{2}$	90 $\frac{1}{2}$
Exchequer Bills	...	...	7s. P.	8s. 6d.	17s. 6d.	10 Pm.	5s. Pm.	23s.	4s. Pm.	19s. Pm.	13s.
RAILWAYS.											
Brighton	Stock	100	98	97 $\frac{1}{2}$	102	99 $\frac{1}{2}$	102 $\frac{1}{2}$	104	97 $\frac{1}{2}$	97 $\frac{1}{2}$	100 $\frac{1}{2}$
Caledonian	"	100	62	59 $\frac{1}{2}$	65	62	65 $\frac{1}{2}$	65	58 $\frac{1}{2}$	58 $\frac{1}{2}$	62 $\frac{1}{2}$
Eastern Counties	"	20	11 $\frac{1}{2}$	11 $\frac{1}{2}$	12 $\frac{1}{2}$	11 $\frac{1}{2}$	12 $\frac{1}{2}$	12 $\frac{1}{2}$	11 $\frac{1}{2}$	11 $\frac{1}{2}$	12 $\frac{1}{2}$
Great Northern	"	100	88 $\frac{1}{2}$	89 $\frac{1}{2}$	93	89 $\frac{1}{2}$	93 $\frac{1}{2}$	94 $\frac{1}{2}$	88	89	92 $\frac{1}{2}$
Great Western	"	100	65 $\frac{1}{2}$	63 $\frac{1}{2}$	68 $\frac{1}{2}$	65 $\frac{1}{2}$	69 $\frac{1}{2}$	69	62 $\frac{1}{2}$	62 $\frac{1}{2}$	67
London & North-Western	"	100	99 $\frac{1}{2}$	97 $\frac{1}{2}$	103 $\frac{1}{2}$	99 $\frac{1}{2}$	104 $\frac{1}{2}$	104 $\frac{1}{2}$	97	96 $\frac{1}{2}$	101
Midland	"	100	69 $\frac{1}{2}$	68 $\frac{1}{2}$	75	69 $\frac{1}{2}$	75 $\frac{1}{2}$	75 $\frac{1}{2}$	68	68	73 $\frac{1}{2}$
Lancashire and Yorkshire	"	100	76 $\frac{1}{2}$	75 $\frac{1}{2}$	82	76 $\frac{1}{2}$	83	82 $\frac{1}{2}$	75	75	81 $\frac{1}{2}$
North Staffordshire	"	20	17 $\frac{1}{2}$	13	12 $\frac{1}{2}$	13	12 $\frac{1}{2}$	12 $\frac{1}{2}$	12 $\frac{1}{2}$	12	12 $\frac{1}{2}$
South-Eastern	Stock	100	60 $\frac{1}{2}$	59 $\frac{1}{2}$	63 $\frac{1}{2}$	61	64	64 $\frac{1}{2}$	59 $\frac{1}{2}$	59 $\frac{1}{2}$	61
South-Western	"	100	83	79 $\frac{1}{2}$	85	83 $\frac{1}{2}$	85 $\frac{1}{2}$	85 $\frac{1}{2}$	79 $\frac{1}{2}$	79 $\frac{1}{2}$	83 $\frac{1}{2}$
York, Newcastle, & Berwick	"	100	71 $\frac{1}{2}$	70 $\frac{1}{2}$	75 $\frac{1}{2}$	72	76	76 $\frac{1}{2}$	70 $\frac{1}{2}$	70	74
York and North Midland	"	100	49	47 $\frac{1}{2}$	52 $\frac{1}{2}$	49 $\frac{1}{2}$	52 $\frac{1}{2}$	52 $\frac{1}{2}$	47 $\frac{1}{2}$	47 $\frac{1}{2}$	50 $\frac{1}{2}$
Northern of France	20	16	35	34 $\frac{1}{2}$	36 $\frac{1}{2}$	35 $\frac{1}{2}$	36 $\frac{1}{2}$	37 $\frac{1}{2}$	34 $\frac{1}{2}$	34 $\frac{1}{2}$	35 $\frac{1}{2}$
East Indian	20	20	22 $\frac{1}{2}$	24	25	24 $\frac{1}{2}$	25 $\frac{1}{2}$	25 $\frac{1}{2}$	22 $\frac{1}{2}$	24	24 $\frac{1}{2}$

CURRENCY.

BANK OF ENGLAND.

An Account, pursuant to the Act 7th and 8th Victoria, c.32, for each Week ended on a Saturday, for the Second Quarter of 1855.—(Continued from p. 199.)

[Compiled from the "Bankers' Magazine."]

ISSUE DEPARTMENT.

Date.	Notes Issued.	Notes in hands of Public.	Government Debt.	Other Securities.	Gold Coin and Bullion.	Silver Bullion.
1855.	£	£	£	£	£	£
April 7 ...	28,392,500	19,812,360	11,015,100	2,984,900	14,392,500	...
" 14 ...	28,351,365	20,383,830	11,015,100	2,984,900	14,351,365	...
" 21 ...	28,372,290	20,282,865	11,015,100	2,984,900	14,372,290	...
" 28 ...	28,791,785	20,359,680	11,015,100	2,984,900	14,791,785	...
May 5 ...	28,911,030	20,168,430	11,015,100	2,984,900	14,911,030	...
" 12 ...	29,336,510	19,919,335	11,015,100	2,984,900	15,336,510	...
" 19 ...	29,902,550	19,621,940	11,015,100	2,984,900	15,902,550	...
" 26 ...	30,327,685	19,617,315	11,015,100	2,984,900	16,327,685	...
June 2 ...	31,083,175	19,740,205	11,015,100	2,984,900	17,083,175	...
" 9 ...	31,056,945	19,451,172	11,015,100	2,984,900	17,056,945	...
" 16 ...	31,350,395	19,536,195	11,015,100	2,984,900	17,350,395	...
" 23 ...	31,429,435	19,542,125	11,015,100	2,984,900	17,429,435	...

BANKING DEPARTMENT.

Date.	Proprietors' Capital.	Rest.	Public Deposits.	Other Deposits.	Seven Day and other Bills.	Total Dr.
1855.	£	£	£	£	£	£
April 7 ...	14,553,000	3,085,593	6,008,895	11,396,875	904,839	35,949,202
" 14 ...	14,553,000	3,123,416	2,720,640	14,233,796	947,721	35,578,603
" 21 ...	14,553,000	3,127,862	4,450,664	13,019,567	928,357	36,079,450
" 28 ...	14,553,000	3,131,759	4,468,013	13,173,482	972,072	36,298,326
May 5 ...	14,553,000	3,136,435	4,337,590	12,645,651	1,090,536	35,763,212
" 12 ...	14,553,000	3,165,785	2,733,908	12,205,207	1,028,140	33,686,040
" 19 ...	14,553,000	3,170,300	3,358,272	12,230,771	991,720	34,804,063
" 26 ...	14,553,000	3,172,157	5,196,161	11,932,316	1,020,359	35,873,993
June 2 ...	14,553,000	3,112,943	5,211,168	13,282,876	985,884	37,145,871
" 9 ...	14,553,000	3,114,923	5,447,207	13,168,985	1,036,692	37,320,807
" 16 ...	14,553,000	3,123,055	5,586,754	13,307,714	1,034,770	37,605,293
" 23 ...	14,553,000	3,126,279	6,486,685	13,224,170	986,492	38,376,926

Date.	Government Securities.	Other Securities.	Notes.	Gold and Silver Coin.	Total Cr.
1855.	£	£	£	£	£
April 7 ...	13,026,749	13,655,995	8,580,140	686,315	35,949,202
" 14 ...	13,673,713	13,266,068	7,967,535	671,287	35,578,603
" 21 ...	14,274,373	13,032,442	8,089,425	683,210	36,079,450
" 28 ...	14,214,373	12,944,224	8,432,105	707,624	36,298,326
May 5 ...	13,591,373	12,721,050	8,742,600	708,189	35,763,212
" 12 ...	11,016,374	12,543,800	9,417,175	708,691	33,686,040
" 19 ...	10,823,132	12,455,155	10,280,610	745,166	34,304,063
" 26 ...	12,110,721	12,215,806	10,720,570	727,096	35,873,993
June 2 ...	12,677,816	12,419,158	11,342,970	705,927	37,145,871
" 9 ...	12,702,488	12,305,431	11,605,775	707,113	37,320,807
" 16 ...	12,681,068	12,399,704	11,814,200	710,321	37,605,293
" 23 ...	12,896,068	12,853,957	11,887,310	739,591	38,376,926

QUARTERLY JOURNAL
OF THE
STATISTICAL SOCIETY.

DECEMBER, 1855.

The Effect of the War, in Russia and England, upon the Principal Articles of Russian Produce. By RICHARD VALPY, Esq.

[Read before the Statistical Section of the British Association at Glasgow, September, 1855.]

THE relative effect of the war upon the commerce of Russia and England, in respect of the principal articles of Russian produce, gives rise to a conflict of opinions. It is proposed in the present paper, to offer a few remarks, and some statistics, upon the subject, confining them, however, to articles commonly known as Baltic produce, in which the two countries have traded principally with each other.

It is a nice point as to which party, the producer or the consumer, suffers the most from an interruption of trade, because so many contingencies influence the consequent pressure; but the cessation of a direct commercial intercourse is most probably attended with more embarrassment in Russia than in England to the parties interested in particular articles of merchandize. In Russia absolute ruin would be the lot of many producers, and persons engaged in the export of raw materials, if access to the consuming markets was cut off; while, in England, the attraction of the same substances from other quarters, and the substitution of other articles for manufacturing purposes, would materially mitigate the effects of the loss of the usual supplies.

These remarks may be received as supporting a prohibition of all import into this country of Russian produce, a policy which is often advocated, because of the greater blow that would be inflicted upon the resources of Russia. It may be observed, in explanation, that as the stoppage of the export trade of Russia to all countries could not be effected under present circumstances, this country would certainly be placed in a disadvantageous position, in comparison with neutral countries, if, whilst their markets received Russian produce by land, we resolved rigorously to exclude all Russian produce from our own markets.

The principal productions of Russia, which come to us from the Baltic, are tallow, flax, hemp, linseed, and bristles. As there is no considerable number of manufactories in Russia to create a large home demand, a very large proportion of the produce is exported. In ordinary times, the chief proportion of the total quantities of produce exported is sent to England. It also happens that the principal articles which we are in the habit of importing from the Baltic ports of Russia, constitute our chief supply of such articles. England, therefore, offers to Russia the largest market for the disposal of her principal productions; and Russia affords to England the principal supplies of certain raw materials.

The following table of the Exports from Russia, distinguishing the proportions to England, and of the Imports into England, with the proportions from Russia, shows the relative importance of England and Russia to each other, in the demand and supply of the articles enumerated*.

EXPORTS FROM RUSSIA.			
Articles.	Annual Average.—Three Years.—1850-51-52.		
	Total Quantities.	Quantities to England.	Proportions to England.
Tallow.....cwt.s.	927,003	713,700	77 per cent.
Flax..... „	1,203,129	770,021	64 „
Hemp „	909,997	517,548	56 „
Linseed .....qrs.	848,076	510,048	60 „
Bristles .....cwt.s.	25,540	16,012	63 „

IMPORTS INTO ENGLAND.			
Articles.	Annual Average.—Three Years.—1850-51-52.		
	Total Quantities.	Quantities from Russia.	Proportions from Russia.
Tallow.....cwt.s.	1,170,471	753,785	64 per cent
Flax..... „	1,473,228	1,002,655	67 „
Hemp „	1,138,778	601,362	53 „
Linseed .....qrs.	679,619	463,620	68 „
Bristles .....cwt.s.	29,008	23,615	81 „

* There is a considerable difference in the quantities representing the Russian exports to England, and the English imports from Russia; but such a discrepancy is not uncommon. The corresponding entries of the same articles in the custom-house accounts of two countries are seldom found to agree.

The large proportion of from one-half to three-fourths of the total of such exports from Russia went to England; and of the total of such imports into England, the like proportion came from Russia. In their trade, therefore, in certain important raw materials, the two countries have been almost equally dependent upon each other.

Such was the state of trade between Russia and England in time of peace, and on an average of the three years 1850-51-52. If we compare with this average our imports of Russian produce in the years 1853 and 1854, we shall see the effects of an anticipated interruption in our supply, and of the first year of actual warfare.

In 1853, under the influence of political events, there was a large increase of our imports, especially from Russia itself; but in 1854, with the exception of tallow and bristles, the total imports into the United Kingdom were well maintained, while the supplies from Russia were materially diminished. The following are the quantities and proportions for 1853 and 1854, compared with the average of the previous three years:—

Articles.	TOTAL IMPORTS INTO UNITED KINGDOM.				
	Average of 1850-51-52.	1853.	1854.	Increase or Decrease.	
				1853, Over Average.	1854, Over Average.
Tallow.... cwt.s.	1,170,471	1,175,754	749,721	+ 0½ per cent.	—36 per cent.
Flax..... „	1,473,228	1,883,374	1,303,235	+ 28 „	—12 „
Hemp „	1,138,778	1,237,872	1,211,297	+ 9 „	+ 6 „
Linseed.. qrs.	679,619	1,035,335	828,513	+ 34 „	+ 22 „
Bristles.. cwt.s.	19,339	28,902	16,141	+ 49 „	—16 „
	IMPORTS FROM RUSSIA.				
	Average of 1850-51-52.	1853.	1854,* through Prussia.	Increase or Decrease.	
				1853, Over Average.	1854, Over Average.
Tallow.... cwt.s.	753,785	845,962	342,934	+ 12 per cent.	—54 per cent.
Flax..... „	1,002,655	1,287,993	651,994	+ 28 „	—35 „
Hemp „	601,362	813,231	386,824	+ 35 „	—37 „
Linseed.. qrs.	463,620	765,019	402,694	+ 65 „	—13 „
Bristles.. cwt.s.	15,181	22,123	7,326	+ 46 „	—52 „

* After deducting the average imports from Prussia before the war.

This table indicates, therefore, that, in comparison with the average of 1850-51-52, our total imports of these articles, in 1853, increased from $0\frac{1}{2}$ to 49 per cent., and our imports from Russia, from 12 to 65 per cent. In 1854, our total imports of tallow, bristles, and flax, decreased 36, 16, and 12 per cent. respectively, whilst hemp and linseed were increased by 6 and 22 per cent. But upon all these articles imported from Russia in 1854, there was a decrease of from 13 to 54 per cent., and the 13 per cent. (for linseed) is exceptionally small, because large quantities of that article came from the Black Sea, where the blockade was not then rigidly enforced. As far, therefore, as the Russian trade with England is concerned, the blockade of the Baltic ports, in 1854, may be said to have stopped one-half of the usual Russian exports. And although, in 1853, Russia sent to England considerably more produce, the exports from Russia to all countries were not correspondingly increased. Russia was not, therefore, compensated for the great diminution of trade, in 1854, by a previous increased activity in 1853.

The increased exports to England in 1853, may be estimated by a comparison of their proportion to the total exports in 1853, and on the average of 1850-51-52. Of the total exports, there went to England—

	On the Average of the Three Years, 1850-51-52.*	In 1853.†
Tallow	77 per cent.	87 per cent.
Flax	64 ,,	74 ,,
Hemp	56 ,,	72 ,,
Linseed	60 ,,	63 ,,
Bristles	63 ,,	66 ,,

* Per centage, on average of 1850, 51, and 52, of Russian imports compared with entire supply.

† Ditto for 1853.

The importance of the Russian exports, in 1853, as compared with previous years, may be seen in the following table, which gives the quantities and value of the principal articles in each year, from 1850 to 1853. The average quantities of these exports, in 1850-51-52, have already been stated, but these more detailed particulars, from the Russian accounts, will not be uninteresting.

EXPORTS FROM RUSSIA.

Articles.	Years.	Quantities.		Value.	
		Total.	To England.	Total.	To England.
		Cwts.	Cwts.	£	£
Tallow	1850	1,065,118	753,111	1,727,056	1,209,877
	1851	963,811	787,760	1,575,709	1,280,818
	1852	752,082	600,231	1,253,793	994,676
	1853	936,080	840,439	1,777,883	1,600,446
Flax	1850	1,384,588	945,333	1,768,455	1,237,149
	1851	973,700	625,262	1,432,981	949,473
	1852	1,251,099	739,467	1,604,230	978,832
	1853	1,383,440	1,020,596	1,966,703	1,479,729
Hemp.....	1850	875,550	510,990	1,037,922	615,298
	1851	977,963	557,473	1,159,944	669,132
	1852	876,480	484,180	1,060,044	596,259
	1853	1,147,900	806,072	1,488,052	1,052,221
Linseed		Qrs.	Qrs.		
	1850	771,982	496,855	1,151,436	764,187
	1851	807,058	472,448	1,575,709	731,399
	1852	965,188	560,843	1,376,887	835,744
	1853	1,178,723	742,345	1,790,398	1,173,861
Bristles		Cwts.	Cwts.		
	1850	26,793	17,917	415,365	307,940
	1851	25,971	15,142	360,100	248,431
	1852	23,857	14,978	351,989	253,839
	1853	28,631	19,048	422,753	318,409

A comparison of these figures proves that the total exports of these articles from Russia in 1853, were not, in general, beyond the largest amounts in the previous three years.

The value given in the last table of the produce exported from Russia, shows how considerable is the worth of the Russian produce of which England has hitherto taken so large a share. In 1853, Russia exported these articles to the value of 7,445,789*l.*, and the proportion which went to England alone, amounted to 5,624,666*l.*, or 75 per cent.

In the absence of returns of the total exports of Russian produce in 1854, we may, perhaps, estimate the quantities by our own imports. The imports of Russian produce, as recorded in England, are, however, larger than the Russian returns of exports to England.

Upon the average of 1850-51-52, there was an excess in the English accounts of 5 per cent. for tallow; 30 per cent. for flax; 16 per cent. for hemp; and 47 per cent. for bristles. For linseed, the excess was, in the Russian accounts, to the extent of 9 per cent. The imports into the United Kingdom, with a reduction in the ratio of these per centages, (except for linseed which will require an addition,) may be taken as the quantities which would be given in the Russian accounts for the exports to England, and, by adding the same per centage proportions for the exports to all other countries,

as in 1853, we shall obtain an estimate of the total exports of the chief articles of produce from Russia in 1854.

The next table exhibits this estimate in comparison with the average exports in 1850-51-52, and the percentage difference between 1854 and the average year. As a test of the probable approximation of the estimated to the actual exports, some figures from a foreign return are added, of the exports from the Prussian ports in 1854.

Articles.	Average Annual Exports from Russia in the Three Years 1850-51-52.	Estimated Exports from Russia in 1854.	Exports of Russian Produce from Prussian Ports in 1854.	Per-Centage Differences between 1854 and Average of 1850-51-52.
Tallow cwt.s.	927,003	465,500	453,641*	50 per cent.
Flax "	1,203,129	702,147	....	Decrease. 41 "
Hemp "	909,997	451,295	....	50 "
	2,113,126	1,153,442	1,148,068*	
Linseed qrs.	848,076	696,723	....	....
Bristles cwt.s.	25,540	....	....	....

* From a return by Dr. Hubner, of Berlin, after deducting, for the usual trade of Prussia, quantities to the extent of the exports in 1853.

From the near agreement of the estimated exports with the exports from the Prussian ports, we may assume that this estimate represents, with tolerable accuracy, the actual Russian exports in 1854. We have already shown that the imports into the United Kingdom of Russian produce, in 1854, were generally less by nearly 50 per cent. than on an annual average before the war; and this last table of the probable exports from Russia exhibits about the same diminution. In a return from Lübeck, published by the French government, it is stated that the total quantities of the principal articles exported from Russia to that place, were 98,849 cwt.s., in 1853, and but 40,889 cwt.s. in 1854, the decrease being 57,960 cwt.s., or 58 per cent. There can hardly, therefore, exist a doubt that the compulsory stoppage of the Russian trade by sea has already reduced the foreign commerce of Russia to one-half of what it was before the war.

It is more difficult to arrive at any comparative results for the present year, 1855. Our imports of Russian produce from the Baltic have usually been received almost entirely in the last six months of the year, and the imports in the first six months of past years are too inconsiderable to afford the means of judging of the relative importance of the trade in each year. It is probable that the shipment of the articles from the Prussian, instead of the Russian ports, in 1855, may so alter the time of arrival in this country, as to change considerably the proportions of our imports in the first and second six months of the year.

Although the imports in the first six months of 1855 will not enable us to form an opinion upon the supplies of Russian produce that will probably reach us during this year; a statement of our imports is given, as some points of interest will be found in it. The first item that will attract attention, is the very large receipts of tallow, which amount to 323,495 cwts. against from 50 to 60,000 cwts. in the corresponding period of the previous three years. This large difference cannot, however, be considered as the rate of increase we are to expect in the year. It must remain to be seen whether this large supply is chiefly produce intended to be sent to England, but which could not be forwarded in 1854, when there was a larger decrease in our imports of Russian tallow, than of the other principal articles, or whether the difference in the place of export has led to the larger portion of the year's supply arriving at an earlier period in 1855, than in former years.*

	Imported from Russia and via Prussia.	Imported from other Countries.	Total.
1st 6 months	Cwts.	Cwts.	Cwts.
Tallow { of 1852	47,490	194,979	242,469
{ „ 1853	58,605	146,744	205,349
{ „ 1854	50,934	205,742	256,676
{ „ 1855	323,495	134,245	457,740
1st 6 months			
Flax { of 1852	195,774	305,102	400,876
{ „ 1853	274,104	353,072	627,176
{ „ 1854	167,394*	476,441	643,835
{ „ 1855	128,627†	179,108	307,735
1st 6 months			
Hemp..... { of 1852	10,777	269,380	280,157
{ „ 1853	41,013	203,715	244,728
{ „ 1854	34,993	293,511	328,504
{ „ 1855	97,441	521,843	619,284
1st 6 months			
Linseed { of 1852	118,662	126,472	245,134
{ „ 1853	126,342	148,559	274,901
{ „ 1854	133,262	139,682	272,944
{ „ 1855	101,101	349,892	450,993

* Including imports from Prussia, but with a deduction, for Prussia's own exports, of the amount of imports received thence in 1853.

† The whole from Prussia, and too small an amount for a reduction as in 1854.

* The subsequent imports of tallow from Russia and Prussia in the three months ended 30th September, which amounted to the proportionately smaller quantity of 106,852 cwts., show that our imports in 1855 will have principally arrived in the first, and not in the second six months of the year. The quantities imported in 1855 will be larger than in 1854, but the average of 1854 and 1855 will be far below the annual average before the war. The exports of tallow from Russia in the early part of 1855 were increased by produce intended for export in 1854, but which was detained by the early setting-in of winter and the stoppage of the ways of communication. Recent commercial accounts from Russia report a falling-off in the exports in

Of flax, hemp, and linseed, the quantities received from Russia are too small to call for remark. With respect to the imports of these articles from other countries than Russia, the half-yearly returns are of more value, as the imports have taken place nearly equally, in the first and second six months of each year. A considerable increase, in 1855, will be observed; and this increased supply has been chiefly obtained from British India.

The extent of the exports of produce from Russia, and of our imports of such produce, before and since the war, having now been examined, we may endeavour to investigate the respective effects of the war upon the two countries; and, for this purpose, we must turn from quantities to value.

The expectation and outbreak of war created a pressing and speculative demand for Russian produce in this country, and induced a prevalence of high prices; and comparatively large imports from all countries did not save the English consumer from the disadvantages of advancing prices. The cost of articles may have been unnecessarily enhanced in the English markets; and it is quite possible that the consequent loss to the English consumer may have been greater in proportion than the gain to the Russian producer.

The high prices of 1854, consequent upon the interruption of commercial operations, have not been maintained in 1855.

The fluctuations in the prices, in England, of the principal articles of Russian produce, are shown in the next table, (p. 309,) which contains the first weekly quotation of prices in each month, for each year, from 1852 to 1855, taken from the London price current.

With reference to these prices, for each year, it may be remarked that—

In 1852, the range closely corresponded with the previous years, 1850 and 1851.

In 1853, tallow and hemp, alone, experienced any considerable rise. Tallow varied from 44s. 3d. to 58s. 6d., against 35s. 6d. to 47s. 3d. per cwt., in 1852; and hemp from 35l. to 39l. 10s., against 29l. 10s. to 38l. 10s. per ton, in 1852. Tallow continued to advance throughout the year, but hemp declined after the first four months.

In 1854, all the articles rose in price, particularly upon the declaration of war in March; and hemp was then very much advanced, in comparison with 1853; the highest price for tallow was 67s. 6d. against 58s. 6d.; for flax, 56l. against 41l.; for hemp, 70l. against 39l. 10s.; and for linseed, 65s. against 48s. Tallow and linseed remained high throughout the year, but flax and hemp soon fell, and considerably, towards the end of the year.

In 1855, only linseed shows as high a price as in 1854, and it has advanced from 65s. to 72s. per qr. Tallow has declined, and having been at 49s. 3d., or 10s. below the lowest of 1854, was 55s. in August, or about 10s. below the highest in 1854. Hemp is also

the present year. Messrs. Smith's circular of October 29th states that, according to accounts from St. Petersburg to the 8th of October, the quantities of tallow dispatched were 48,553 casks in 1855, and 66,154 in 1854. Of the quantity dispatched this year, 19,000 casks have arrived, and of the remaining 30,000, it is thought under 15,000 may reach the German Ports before the winter sets in. This would show an export of 34,000 casks out of 48,553 dispatched.

Articles.	Years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Tallow.	1852	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
St. Petersburg.	1853	36 0	35 9	36 0	35 6	36 0	37 0	37 9	38 6	39 6	41 0	43 9	47 3
New.	1854	45 0	44 9	44 3	44 6	47 0	47 0	53 6	51 6	51 3	58 6	56 6	55 9
Per cwt.	1855	59 3	62 0	64 0	67 6	64 0	62 6	66 6	66 9	65 6	63 0	65 6	65 0
		£	£	£	£	£	£	£	£	£	£	£	£
Flax.	1852	40	40	....	....	....	....	....	....	....	....	....	....
Riga.	1853	....	....	....	....	41	41	40	40	40	40	40	....
Per ton.	1854	....	....	43	....	56	54	51	50	50	46	38	....
	1855	....	....	....	....	....	....	42 to 47	40 to 46	....	....	....	....
Hemp.	1852	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.
St. Petersburg.	1853	30 10	30 10	30 5	29 10	29 10	29 10	30 0	30 0	30 0	29 15	35 0	38 10
Clean.	1854	38 10	39 0	39 0	39 10	38 0	37 0	35 0	37 0	37 0	36 0	36 10	36 0
Per ton.	1855	36 0	44 10	47 0	70 0	68 0	60 0	62 0	62 0	62 0	59 0	59 0	57 0
		56 0	47 10	45 0	42 0	46 0	45 0	45 0	44 10	....	....	....	....
		£	£	£	£	£	£	£	£	£	£	£	£
Linseed.	1852	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.
Fine.	1853	43	43	44	45	44	44	44	44	44	44	45	47
Per quarter.	1854	47	47	46	44	43	43	44	45	46	48	48	46
	1855	46	56	54	60	59	60	58	58	56	54	61	65
		65	59	57	56	60	63	66	72	....	....	....	....
		£	£	£	£	£	£	£	£	£	£	£	£
Bristles.	1852	18	18	18	18	18	18	18	18	18	18	18	18
St. Petersburg.	1853	18	18	18	18	18	18	18	18	18	20	20	20
1st.	1854	20	....	....	....	....	....	....	....	....	....	....	....
Per cwt.	1855	....	....	....	....	....	....	....	38 10	....	....	....	....

much lower, having been 56*l.* in January, as compared with 70*l.* in April, 1854, and in August it was 44*l.* 10*s.* Flax is quoted at 40*l.* to 46*l.*, in August, against 56*l.*, in May, 1854.

For the important articles, tallow, hemp, and flax, there has been, in England, a considerable reduction of price, in 1855.

It does not appear that prices have risen in Russia to compensate the producers for the greatly diminished exports. In the absence of more complete information, respecting prices in Russia, the following quotations are given.

Tallow	{	December, 1852—at St. Petersburg—New Tallow,	about 41 <i>s.</i> per cwt.
		March, 1853	about the same price.
		July, 1855	32 <i>s.</i> 10 <i>d.</i> per cwt.
Flax (12 heads).	{	December, 1852—at St. Petersburg	about 37 <i>l.</i> per ton.
		March, 1853	about 29 <i>l.</i> „
		July, 1855—at Kovno, on the frontier	about 33 <i>l.</i> 15 <i>s.</i> per ton
Hemp (clean).	{	December, 1852—at St. Petersburg	about 28 <i>l.</i> per ton.
		March, 1853	about 29 <i>l.</i> „
		July, 1855—at Kovno, on the frontier	about 32 <i>l.</i> 5 <i>s.</i> „

With an actual decrease between the prices in July, 1855, and December, 1852, it may be doubted whether prices, in Russia, could have risen, in 1854, in anything like the same proportion as in England.*

The prices here quoted for 1855 are unfavorable to the Russian producer. With low prices, working expenses increased by the pressure of the war, and an enhanced cost of transport, the producers must now be placed in a most unfavorable position.

It is true, that a considerable addition to the market price is paid in Russia for the transport of produce by land to the frontier, but this extra payment to a class of persons who convey the produce, probably at a low profit upon the wear and tear of their property employed, and for want of their usual occupation, cannot compensate the nation for the loss suffered by the serious check upon the chief sources of wealth.

The cost of transport by land, in Russia, is increasing; and as it must continue very high, that alone will prevent the existence of any considerable trade. With a price of 32*l.* 10*s.* per ton, for tallow, at St. Petersburg, no less than 14*l.* 10*s.*, in addition, is stated to be the cost of carriage to Memel, with 5*l.* more for delivery in London. If 19*l.* 10*s.* per ton, is the cost of conveyance to London, instead, perhaps, of less than one-fourth that amount,

* The following annual range of prices in Russia has since been received, and prove that no material advance was established in 1854, and that low prices have prevailed in 1855.

	1853.			1854.			1855.	
	<i>s.</i>	<i>d.</i>		<i>s.</i>	<i>d.</i>		<i>s.</i>	<i>d.</i>
Tallow, new, per cwt.	37	9 to 44	†	28	9 to 38	†	32	to 34
	£	£		£	£		£	
Hemp, clean, per ton	24	3 to 28	‡	30	to 40	‡	31	‡
	£	£		£	£		£	£
Flax, 12 head	....	....		31	‡		30	to 32

† At St. Petersburg.

‡ At Kovno.

when the sea passage was open, the price, in Russia, must remain very low, for tallow to come to England, in competition with supplies from other countries, and also with the important article of palm oil, the import of which has greatly increased, and which can be much used as a substitute for tallow.

That Russia can export by land what she has hitherto sent by sea, is next to impossible. The distances to be traversed, the comparative absence of practicable routes, and the bulk of the articles to be forwarded, would be great impediments in time of peace, even when all the resources of the country were in free operation.

A French report from Lübeck thus enumerates the obstacles to an extensive trade in Russia by land :—"Insufficient means of carriage ; want of roads, and necessary dépôts ; damage to merchandise ; and increased cost of carriage." In this country even, it would not be found an easy matter to transport large quantities of such articles as coal and cotton, from one extremity of the land to the other, (and that distance does not afford an adequate comparison with the journeys that must be performed in Russia,) if only the ordinary roads and some extent of inland navigation were available.

The results of the inquiry attempted in the present paper may be thus stated :—

That, previous to the war, Russia exported her principal Baltic produce chiefly to England, and England imported such productions chiefly from Russia.

That, since the outbreak of war, the exports of produce from Russia have diminished to a greater proportionate extent than the general imports of such articles into England.

That there has not been an increase of value of produce in Russia, to compensate the producer for the decrease of exports ; whilst supplies from other countries than Russia, and the use of substitutes, will prevent the consumer, in England, suffering from very high prices.

That the difficulties, and consequent expense, of transport by land, in Russia, render the injuries of the blockade necessarily very severe.

On the Fluctuations in the Number of Births, Deaths, and Marriages, and in the Number of Deaths from Special Causes, in the Metropolis, during the last Fifteen Years, from 1840 to 1854, inclusive. By WILLIAM A. GUY, M.B., Cantab.; Fellow of the Royal College of Physicians; Professor of Forensic Medicine, King's College; Physician to King's College Hospital; and one of the Honorary Secretaries of the Statistical Society.

[Read before the Statistical Section of the British Association at Glasgow, September, 1855.]

THE objects which I have in view in the present communication are, 1st, to reduce the facts contained in the "summary of births, deaths, and causes of deaths in London, for the fifteen years, 1840-1854, compiled from the Weekly Returns, and published by authority of the Registrar General," to a form admitting of comparison of one year with another, and useful for purposes of reference; and 2nd, to invite attention to the most remarkable results of such a comparison of year with year, and especially to the fluctuations occurring in the mortality from special causes.

I. For the accomplishment of the first of these objects, the "Summary" to which I have just referred supplies all the necessary materials, inasmuch as it not only tabulates the births, and the deaths from all causes and from special causes*, for each of the fifteen years, but also states the estimated number of the population of the metropolis for each of those years. All, therefore, that remained to be done, in order to reduce these numerical facts to a form admitting of comparison, was to equalize the length of the several years by reducing them to the common standard of 365 days, and to make choice of some convenient number of living persons to which to refer the annual return of births and deaths. For this purpose I have selected the number of one million. The tables in the Appendix are the results of this twofold work of equalization. They display, for the fifteen years 1840 to 1854 inclusive, *the number of births and deaths in a million persons living during a year of 365 days.*

II. Before I proceed to make that comparison of year with year, and to notice more especially the fluctuations in the mortality from special causes, which I have stated to be the second object of this communication, I must invite attention to certain circumstances which are known to affect the value both of the individual facts and of the aggregate results.

In reference to the return of births, deaths, and marriages, it will be sufficient to state that while there is reason to believe that the number of marriages and deaths is truly reported, the reported number of births, in consequence of the registration of births not being compulsory, has generally fallen short of the actual number, especially in the first years of the series. This circumstance will have to be borne in mind when I come to speak of the fluctuations in the number of births.

The number of deaths, as I have just stated, is believed to be truly

* I have been favoured by Dr. Farr with a return of the marriages for thirteen out of the fifteen years, which return is embodied in Table I. of the Appendix.

reported; and it is not till we come to consider the deaths from special causes that we have occasion to feel any misgiving as to the value of the figures contained in the tables. There are several circumstances to be taken into account in estimating the value of the individual facts as well as of the aggregate results. In the first place, it must be borne in mind that, during the whole period of fifteen years over which the returns extend, the attention of the Registrar-General has been steadily directed to the improvement of the registration, by instructions addressed to the registrars themselves, to medical men, and to coroners. As early as 1843 a "Statistical Nosology," very carefully and skilfully prepared, was issued from the central office, with circular letters addressed to the registrars on the one hand and to medical practitioners on the other, the one with the signature of the Registrar-General, the other having the joint signatures of the then Presidents of the Royal College of Physicians and Surgeons, and the Master of the Society of Apothecaries. These circulars, which cannot fail to have had considerable effect upon the registration of the causes of death, were followed in 1845 by Instructions to Coroners, accompanied by a classification of the causes of violent deaths. In this same year, 1845, the Registrar-General effected a still more important improvement, by distributing to every qualified medical practitioner throughout the country blank forms of certificates of fatal diseases. Successful efforts were also made to obtain correct returns from hospitals and other charitable institutions.

It will be seen, then, that during these fifteen years, from 1840 to 1854 inclusive, the registrars, the coroners, and the medical profession, were receiving a statistical education at the hands of the Registrar-General; that they were, year by year, becoming more proficient in the work of registration, and that, as a natural consequence, the several columns of the tables, which embody the annual results of this educational training, do not (with exceptions presently to be pointed out,) admit of strict comparison one with another.

It has been just stated that the very important step of issuing to all qualified medical practitioners printed blank forms of certificates of the causes of death was taken in the year 1845, being the sixth year of the series of fifteen years now under review. This year, therefore, constitutes an important era in the history of registration in this country; and the year 1846 may be said to be the first year in which the new forms came into full operation. The last seven years, from 1848 to 1854 inclusive, may, therefore, be conveniently selected out of the whole period of fifteen years, as admitting of comparison of one year with another. The statistical education just alluded to having been completed in 1845, it is reasonable to suppose that before the year 1848 the returns of the causes of death will have attained to all the accuracy of which they are susceptible in the hands of the present race of medical men; and that neither fashion, nor new theories, nor increasing knowledge, will have materially affected them in so short a period of time. In the longer period of fifteen years, even in the absence of statistical instruction, some changes would doubtless have taken place in medical opinions as to the causes of death; but as these changes will not affect the diseases most easy of diagnosis, such as typhus fever, the eruptive fevers,

diarrhœa, &c., the tables will still be found in many parts, throughout the whole period embraced in them, to furnish the materials of a just comparison.

In carrying out that comparison of year with year, which I have stated to be my second object, I propose to comment upon the several tables which form the Appendix, in the order in which they are placed, beginning with the births, deaths, and marriages, and ending with the more considerable of the special causes of disease. In this running commentary I propose, as I have just stated, to direct attention more particularly to the *fluctuations* in the mortality from special causes. It is necessary, therefore, that I should here point out the measure of fluctuation which I am about to employ. That which seems best adapted to the purpose is the quotient obtained by dividing the sum of all the successive differences between year and year, whether in excess or defect, by the number of those differences, and then reducing that quotient to a per-centage proportion of the average of all the years. I propose to call this per-centage the *Measure of Fluctuation*.

As such verbal explanations as these are apt to be imperfectly understood without the aid of an example, I will illustrate my meaning by taking the births and deaths in the metropolis for the short period of five years, from 1840 to 1844 inclusive.

The numbers of births to a million persons living in the metropolis for the five years in question, were, 30,348, 30,618, 31,512, 31,357, and 31,716, yielding an average of 31,110. The four successive differences between these numbers are 270, 894, 155, and 359; and the average difference 419·5. A calculation based upon these two averages (the average number and the average difference,) yields a per centage of 1·35, which per-centage is the *Measure of Fluctuation*.

Again, the numbers of deaths occurring in a million persons in the metropolis during the same period of five years were, 25,187, 24,179, 23,682, 24,929, and 24,860, yielding an average of 24,567; and four successive differences of 1,008, 497, 1,247, and 69, of which the average is 705·25. The per-centage, or *Measure of Fluctuation*, is, therefore, 2·87.

In this period of five years, therefore, the deaths fluctuated as 2·87, the births as 1·34, the one amount being more than twice as great as the other. In other words, the causes, whatever they may be, which, by their combined operation from year to year, brought about the ascertained number of births, were nearly twice as uniform in their operation as those causes, whatever they may be, which issued the ascertained number of deaths.

I shall have occasion also to make use of the greatest and least numbers in each series of facts; reducing the difference between them, or, in other words, the *Extreme Fluctuation*, to a per-centage proportion of the maximum numbers.

Having thus given some account of the tables which form the Appendix to this communication, and of the meaning of the columns headed "Mean Fluctuation," and "Extreme Fluctuation," I proceed to pass the several tables briefly under review, making such comments upon them as the figures they comprise seem most naturally to suggest.

TABLE I.—*Births, Deaths, and Marriages.*

The births, which amount, on an average of the fifteen years, to 32,028 in the million, have fluctuated between a minimum of 30,348 and a maximum of 33,736, the first number having been registered in the first year, the last number in the last year, of the series. The mean fluctuation in the intervening period has amounted to nearly 2 per cent.

The deaths, it will be observed, have been subject to much greater fluctuation. They have ranged from a minimum of 20,925 to a maximum of 30,078, the average being 24,864. The mean fluctuation is represented by the figures 9·51; or little short of 10 per cent. It will be observed, too, that the highest and lowest numbers, instead of occurring, as in the case of the births, in the first and last years of the series, occur in the two consecutive years 1849 and 1850.

The marriages, for the shorter period of thirteen years, present an amount of fluctuation intermediate between that of the births and of the deaths. The average number of marriages is 10,136; the extremes are 9,408 and 10,966. The mean fluctuation is 3·75, and the extreme fluctuation 14·20.

It will be seen that the extreme fluctuations in the numbers of births, deaths, and marriages, follow the same order as the mean fluctuations. Thus the mean and extreme fluctuations in the births were, respectively, 1·95 and 10·04: in the marriages 3·75 and 14·20; in the deaths 9·51 and 30·38.

The births, as it will appear from the last line of the table, are uniformly in excess of the deaths, and even the fatal year 1849 forms no exception to this rule. The excess varies from 1838 in that year to 11,086 in the year following.

TABLE II.—*Births and Deaths, Males and Females.*

In distinguishing the births and deaths as male and female, we have occasion to observe that both the mean and extreme fluctuations in births and deaths are somewhat greater in females than in males. As the differences, however, are not very considerable, it will suffice to have pointed out the fact.

TABLE III.—*Deaths at the Three Ages 0-15, 15-60, and 60 and upwards.*

There is in this table a difference worth observing both in the years in which the greatest and least numbers of deaths occur, and in the mean and extreme fluctuations. The years of the maxima and minima do not coincide for the three ages; nor are the rates of fluctuation the same. Between the ages of 15 and 60 the years of the greatest and least number of deaths are the same as for the total mortality at all ages. They are the years 1849 and 1850. The minimum number between the ages of 0 and 15 also occurs in the year 1850; but this is the only coincidence. The greatest mean and extreme fluctuation occurs in the period from 15 to 60; the least mean fluctuation from 0 to 15 and the least extreme fluctuation from 60 years of age upwards. The occurrence of the least mean fluctuation in persons under 15 years of age was, perhaps, scarcely to be expected.

TABLE IV.—*Deaths in Five Districts.*

This table, too, presents some results worthy of notice. In the first place it will be observed that in the East Districts alone do the maxima and minima coincide with the maxima and minima of the total deaths. In the South Districts the maximum number falls in the same year, 1849, but the minimum number in the year previous, instead of in the year following. In the West and Central Districts, again, the minima coincide with the minimum of total deaths; while the West and North Districts are distinguished by the occurrence of the greatest number of deaths in the last year of the series, 1854.

But the columns which embody the average number of deaths, and the mean and extreme fluctuations, present results still more striking. The mortality of the Southern Districts of the metropolis is shown to be greatly in excess of the mortality of all the other districts, while the rate of fluctuation, whether measured by the mean or extreme values, is proportionably still greater. The figures are sufficiently curious to deserve to be inserted in this place. The mean numbers of deaths per million inhabitants for the five districts are as follows:—

West Districts	3,676 deaths.
Central „	4,402 „
North „	4,670 „
East „	5,435 „
South „	6,535 „

The fluctuation, whether measured by mean or extreme results, does not exactly coincide with these figures; nor is the order of the districts the same. This will appear from the following tabular comparison:—

	Mean Fluctuation.	Extreme Fluctuation.
North Districts	5·67	18·58
West „	8·49	31·97
Central „	9·45	28·65
East „	9·56	31·66
South „	21·50	48·20

It will be observed that of these five groups of districts two (the East and the South) occupy the same relative position in both tables. But if the extreme fluctuation had been made the basis of the arrangement of the second table, the West Districts would have taken the place of the East, and the South Districts alone would have retained their place at the bottom of both tables. Everything, therefore, combines to proclaim the extreme unhealthiness of the districts on the south of the Thames. When contrasted with the most healthy group of districts (the West) their mortality is as 6,535 to 3,676; and when compared with the districts subject to least fluctuation (the North,) their mean fluctuation is as 21·50 to 5·67, and their extreme fluctuation as 48·20 to 18·58. It is remarkable that in this character of fluctuation the North and the South should be found occupying the two extremes. The only cause which seems capable of explaining a difference so

remarkable and so considerable is the prevalence of epidemics on the south side of the Thames, and the comparative immunity which the inhabitants of the higher districts on the north side enjoy from these scourges of the human race. The figures contained in the two tables now under consideration furnish a new inducement, if any were required, to improve to the utmost the drainage and sewerage of the low-lying districts on the south side of the Thames. If such improvement should be found, after a term of years, to have had little effect on the rate of mortality, or the prevalence of epidemics, every discouragement ought to be thrown in the way of the extension of buildings in so low and unhealthy a locality.

TABLE V.—*Deaths from Special Causes.*

This table consists of three parts:—1. The deaths from all causes, and from specified causes; 2. The deaths from seventeen principal groups of causes; and, 3. The deaths from the special diseases comprised in the first eleven of these principal groups. As attention has already been drawn to the deaths from all causes, it only remains to consider the second and third divisions of the table.

The deaths from seventeen principal groups of causes present some salient points worthy of attention. The seventeen groups admit, in the first place, of being divided into two classes, the one characterised by a high, the other by a low, or moderate, mean fluctuation. At the head of the first class stands the group of zymotic diseases, followed in order by diseases of the skin, &c., sudden deaths, malformations, atrophy, and diseases of the respiratory organs; with a mean fluctuation varying from 31·24, in the case of zymotic diseases, down to 11·26, in the case of diseases of the respiratory organs. At the head of the second class stands age, followed in order by diseases of the joints, bones, rheumatism, &c.; diseases of the uterus, (including puerperal diseases, &c.); diseases of the heart, &c.; diseases of the kidneys; violence, privation, &c.; dropsy, cancer, and other diseases of uncertain seat; debility from premature birth, &c.: tubercular diseases; diseases of the digestive organs; and, lastly, those of the brain, nerves, &c. The mean fluctuation in the case of this second class varies from 10·71, in the case of death from old age, down to 3·50 in the case of diseases of the brain, nerves, &c. Of the whole seventeen groups the zymotic diseases are those which present the highest mean rate of fluctuation, and the diseases of the brain, nerves, &c., the lowest.

Now it is well worthy of remark that the group which comes next in order to zymotic diseases is one which obviously owes its place to the circumstance of its comprising one disease at least which has, of late years, become epidemic, and has thus obtained a right to be placed itself in the zymotic group, namely, carbuncle. This disease which, in the first seven years of the fifteen, caused a number of deaths, varying from 1 to 4, in the last seven years caused a number of deaths varying from 7 to 36. A similar increase has taken place under the heads of "Phlegmon," and "Disease of Skin, &c.," which heads complete the group now under consideration. If we set aside this group of diseases of the skin, as now properly belonging to the zymotic class, in respect of one of its constituents at least, we come

next in order to the group designated "Sudden," and numbered "16." The mean rate of fluctuation in this group is 17.46. But it will be observed that in the first three years, 1840, 1841, and 1842, the number of cases recorded under this head is unusually large, and that the figures in subsequent years show a tendency to fall off year by year. Now this is just one of those groups, or classes, in which we should expect the instructions of the Registrar-General to work the greatest change. We see, accordingly, that coincident with the issue of the "Statistical Nosology" (in the year 1843), there was a sudden fall from the maximum 455 down to 343, followed by a progressive diminution; and that the large numbers of the first three years were never again attained. But though there is reason to believe that this group has undergone considerable changes from the causes now assigned, it is still open to very large fluctuations, as will appear when it is stated that the mean fluctuation for the last seven years amounts to no less than 17.88, being somewhat in excess of the mean fluctuation for the whole fifteen years. Some cause unconnected with defects in registration must, therefore, be in existence to account for the fluctuations to which this group is subject. The considerable number of sudden deaths recorded in the fatal years, 1847, 1849, and 1854, renders it probable that a part, at least, of this fluctuation is due to epidemic influences.

Next in order, when measured by the amount of fluctuation (15.84), is the group distinguished as "Malformations," in which we observe a considerable increase in the year 1843, with a further increase in 1845, which can only be reasonably explained on the supposition that it results from improved registration following the instructions of the Registrar-General.

The group headed "Atrophy" follows after that headed "Malformations," with a mean fluctuation of 14.68. It is worthy of remark that the smallest number of deaths assigned to this cause (171), took place in 1840, the first of the series of fifteen years, and the largest number (826), in the last year of the series, 1854. So considerable a difference is almost sufficient of itself to show that this, too, is a group in which a great change in the mode of registration has taken place.

The group of "Diseases of the Respiratory Organs" does not call for any special comment. Considering that it comprises diseases which are strikingly affected by atmospheric changes, and especially by any considerable fall of temperature in the colder season of the year, the group presents a moderate amount of fluctuation, both mean and extreme. The mean fluctuation is 11.26, the extreme fluctuation 31.15.

Of the six groups constituting the first of the two classes into which the seventeen groups have been arbitrarily divided, one headed "Diseases of the Skin, &c.," has been shown to belong properly to the Zymotic group, and the remainder, with the exception of the last ("Diseases of the Respiratory Organs,") to owe much of their high rate of fluctuation, in all probability, to improvements in registration. It is obvious, therefore, that there is no cause of fluctuation that can compete with those changes in the constitution of the atmosphere which give rise to the diseases commonly designated as infectious, contagious, and epidemic, or grouped under the still more compre-

hensive title of "Zymotic Diseases." Between the figures (31·24) which represent the mean fluctuation of this class of maladies, and those (17·46) which represent the mean fluctuation of the group headed "Sudden," the difference is very considerable; and a still more remarkable difference prevails between the first-named group and the several members of the second class into which the whole seventeen groups have been arbitrarily divided. The mean fluctuation in this second class ranges from 10·71 down to 3·50; numbers which present a very striking contrast to the high rate of fluctuation of the Zymotic group.

In the group headed "Age," which presents a mean fluctuation of 10·71, there is that gradual falling off in the numbers registered which would seem to correspond to a very probable transference of registered deaths from a comparatively indefinite heading to other headings characterized by greater precision.

The very different and much more definite group headed "Diseases of Joints, Bones, viz., Rheumatism, &c.," shows very nearly the same mean and extreme fluctuation as this last group; and will serve as a caution against drawing very positive inferences from mere numerical results.

The next group ("Diseases of Uterus, viz., Puerperal Diseases, &c.") presents no peculiarities worthy of notice.

The group of "Diseases of the Heart, &c.," shows an increase in 1843, with a progressive increase up to the maximum in 1847, which would seem to justify its being classed with those on which the instructions of the Registrar-General have produced a decided effect. There is every reason to suppose that many deaths registered in the early years of this series of fifteen years as "Dropsy," have, for many years past, been entered under the more fitting heading of "Diseases of the Heart."

The same observation applies with nearly equal force and justice to the group next in order, namely, "Diseases of the Kidneys." The progressive increase in the numbers registered under this head corresponds with the great improvement which has taken place of late years in the discrimination of this class of diseases. This group also has, doubtless, been reinforced from the less definite class of "Dropsy."

The group headed "Violence, Privation, &c.," is only so far worthy of note as that the amount of fluctuation (6·89) appears to be very small when it is considered how largely the human will operates to bring about the fatal results registered under these titles.

The mixed group designated "Dropsy, Cancer, and others of uncertain seat," presents, as will be seen, a low mean fluctuation with a considerable extreme fluctuation. The group headed "Debility from Premature Birth, &c.," has a still lower mean fluctuation, and a moderate extreme fluctuation.

"Tubercular Diseases," and "Diseases of the Digestive Organs," are equally remarkable for a low mean fluctuation (4·25 in each case), and a small extreme fluctuation (28·02 and 26·92).

"Diseases of the Brain, Nerves, &c.," stand at the bottom of this class, as showing the least amount of fluctuation, whether measured by mean or extreme results. Between this steady class and the highly fluctuating group of "Zymotic Diseases," the contrast is certainly

very striking. During the last seven years this group of "Diseases of the Brain, Nerves, &c.," shows a mean fluctuation of only 3·04.

I now propose to consider, very briefly, the third division of Table V., or that which shows the number of deaths year by year from individual diseases, together with the fluctuations, mean and extreme, to which they are subject.

The first and largest division in this part of the table consists of the diseases now known as Zymotic diseases, but formerly as the class of endemic, epidemic, and contagious diseases. The group of Zymotic Diseases, which at present comprises eighteen separate maladies, but which admits of still further extension, by being made to embrace at least, Quinsey, from Group 7, and Carbuncle, from Group 11, has been already pointed out as being characterized beyond all the principal groups of diseases by the very considerable fluctuation, mean and extreme, to which it is subject.

As the principal diseases belonging to this class are remarkable for the readiness with which they may be distinguished, even by non-professional persons, they are not likely to have been affected by improvements in registration or in medical science. The whole fifteen years, therefore, are equally available for comparison; and as these diseases are of great importance in their relation to the public health, I shall begin by arranging the more considerable of them in the order of their fluctuation, beginning with that which exhibits the greatest mean fluctuation, and then proceed to offer such remarks as the figures suggest.

Table showing the Mean and Extreme Fluctuation of the Zymotic Class of Diseases.

	Maximum.	Minimum.	Mean.	Mean Fluctuation.	Extreme Fluctuation.
1. Cholera.....	6,209	15	780	153·97	99·76
2. Influenza	562	35	110	95·45	93·77
3. Small Pox.....	890	87	399	69·92	90·22
4. Scarletina	2,132	354	899	59·51	83·40
5. Measles	1,122	249	575	41·74	69·92
6. Dysentery	163	38	85	34·12	76·68
7. Carbuncle*	36	1	9	33·33	97·22
8. Hooping Cough	1,217	582	857	31·04	52·17
9. Diarrhoea	1,522	246	747	29·45	83·83
10. Typhus	1,600	615	951	23·55	61·56
11. Purpura (Scurvy)....	36	6	17	23·53	83·33
12. Erysipelas	260	113	164	17·68	56·54
13. Quinsey†	53	22	34	17·65	58·49
14. Thrush	170	63	103	10·68	62·94
15. Croup	229	130	167	8·98	43·23
16. Ague.....	15	5	10	·23	66·66
17. Remittent Fever	52	9	30	·22	82·70
18. Infantile Fever.....	26	9	17	·20	65·38
19. Syphilis	76	11	43	·15	85·52
20. Hydrophobia	3	1	0·73	38·35	66·66

* From Group 11.

† From Group 7.

There are three diseases in this list which scarcely admit of being considered separately, inasmuch as the mortality set down to two out

of three of them is evidently swollen by cases really due to the remaining one. These diseases are diarrhœa, dysentery, and cholera. That cases of cholera are entered under the heads of Diarrhœa and Dysentery, may be inferred from the fact that the greatest number of cases of both these diseases entered in any one year is set down for the year 1849, in which the Asiatic cholera was at its maximum; and that a similar excess of cases of diarrhœa occurs in the year 1854, when cholera was also rife. It is only in consequence of the close resemblance of the common English cholera to the Asiatic cholera that entries under the single head of "Cholera" are made year by year. Two diseases have thus come to be considered as one. The subjoined table shows the number of cases entered each year under these three heads, together with the aggregate numbers, and the fluctuations to which they are subject singly and collectively. The table is divided into two parts, consisting each of seven years, (with an intermediate year, 1847). In the first septennial period we had no visitation of epidemic cholera, while in the second period we suffered from two such visitations. By comparing the two periods we shall know what excess of mortality is due, in the second period of seven years, to two visitations of Asiatic cholera.

	1840.	1841.	1842.	1843.	1844.	1845.	1846.	Average of the 7 Years.	Mean Fluctua- tion.	Extreme Fluctua- tion.	1847.
Cholera	33	15	62	44	32	21	108	45	71·11	86·11	52
Diarrhœa....	246	248	369	428	348	407	1,022	438	35·62	75·93	886
Dysentery ..	38	42	79	139	62	48	74	69	52·17	72·66	138
Total....	317	305	510	611	442	476	1,204	552	37·68	74·66	1,076

	1848.	1849.	1850.	1851.	1852.	1853.	1854.	Average of the 7 Years.	Mean Fluctua- tion.	Extreme Fluctua- tion.
Cholera	292	6,209	55	90	67	351	4,269	1,619	168·12	99·11
Diarrhœa....	857	1,522	812	960	897	921	1,290	1,037	31·82	46·65
Dysentery ..	150	163	78	72	63	65	70	94	21·28	61·35
Total ...	1,299	7,894	945	1,122	1,027	1,337	5,629	2,750	111·09	88·02

It will be seen, by comparing these tables, that the total mortality in a million of persons living in the metropolis from English cholera, diarrhœa, and dysentery, in the first seven years (1840 to 1846 inclusive,) in which there was no visitation of Asiatic cholera, was 3,865, or an average of 552 per annum; while in the last seven years (1848 to 1854 inclusive,) the total mortality was 19,253, or an average of 2,750. The excess of mortality, which may be presumed to have been due to Asiatic cholera in the last seven years was, therefore, 19,253 — 3,865, or 15,388; and the annual excess 2,750 — 552, or 2,198. The excess now spoken of must be understood to consist of the additional deaths for the three diseases, cholera, diarrhœa, and

dysentery, and not of the addition made by the visitations of Asiatic cholera to the mortality from all causes.

The deaths from cholera, diarrhœa, and dysentery combined, in the first seven years, will be found to have reached their maximum in the year 1846, the hottest year of the fourteen, and with one exception (1841) the year of the greatest rain-fall. This was also the second year of the potato failure, and food was dear.

The relation existing between a high mortality from these diseases and a high temperature is very apparent, and will be distinctly perceived in the following tabular comparison, in which the mortality and the annual average temperature are placed side by side, beginning with the lowest mortality and the lowest mean temperature respectively.

Years.	Deaths from Cholera, Diarrhœa, and Dysentery.	Mean Annual Temperature.	Years.
1841	305	47·6	1845
1840	317	47·7	1840
1844	442	48·6	1844
1845	476	48·7	1841
1842	510	49·4	1843
1843	611	49·6	1842
1846	1,204	51·3	1846

There are here three coincidences in relative position between mortality and temperature; and the year of highest mortality is the year of the highest annual temperature. No other atmospheric condition which can be expressed in figures bears any similar relation to the mortality from these causes.

If we assume the yearly average of 552 deaths from cholera, diarrhœa, and dysentery, during the seven years from 1840 to 1846 inclusive, to be the true average from these three analogous diseases, and consider them as one disease, we shall be in a condition to point out the order of importance of the several maladies comprised in this group of Zymotic diseases. The disease which commits the greatest ravages among the population of the metropolis is typhus fever. The deaths set down to this cause amount to 951 in the million inhabitants. Scarlatina comes next in order, as the cause of 899 deaths. Hooping-cough occupies the third place, and gives rise to 857 deaths. Measles proves fatal to 575 persons; cholera, diarrhœa, and dysentery collectively, to 552 persons; small pox, to 399; croup, to 167; erysipelas, to 164; influenza, to 110; thrush, to 103; syphilis, to 43; quinsey, to 34; remittent fever, to 30; infantile fever and purpura, each to 17; ague, to 10; carbuncle to 9; and hydrophobia, to less than 1, in the year.

The facts relating to the mean and extreme fluctuation of diseases belonging to the Zymotic class are extremely curious. The diseases which give rise to the greatest mortality, and especially those that belong to the class of contagious or infectious maladies, are all to be found occupying a high place in the table. Cholera, as it is natural to expect, occupies the first place, for its visits have been few, and the mortality caused by it considerable. Influenza comes next in

order, then small pox. But the fluctuation of small pox is materially increased by legislation. Scarlatina follows small pox, and measles scarlatina. At the other end of the scale, and contrasting in a remarkable manner with the diseases just mentioned, are three diseases (ague, remittent fever, and infantile fever,) which are neither infectious nor contagious, and one malady (syphilis), which stands at the bottom of the scale, with a mean fluctuation of less than one-sixth per cent., and stands alone as having taken its rise in causes over which the patient can exercise complete control. It is certainly well worthy of remark that a disease, so directly resulting from an act of volition, should issue in a mortality varying so little from one year to another, though presenting a range of mortality (from 11 to 76,) little inferior to that of several diseases characterized by a very considerable mean fluctuation. The small mean fluctuation of syphilis is the more remarkable, as the number of facts on which the calculation is founded is inconsiderable.

The group of diseases marked 2 in Table V., and comprising dropsy, cancer, and several diseases of uncertain seat, is characterized by a moderate mean fluctuation, the smallest fluctuation being in the case of cancer.

The group which follows next in order (Tubercular Diseases) is also subject to a moderate mean fluctuation; and it comprises one very important disease, namely, pulmonary consumption, which shows a remarkable degree of steadiness, whether we test it by the mean or by the extreme fluctuation. This fatal malady of the young adult proved fatal, in the fifteen years comprised in the table, to a maximum of 3,941, a minimum of 2,645, and an average of 3,230, in the million, being little less than a seventh part of the total deaths at all ages, and more than a third part of the deaths from 15 to 60. The average number of deaths from this fatal disease is, as nearly as possible, 13 per cent. of all the specified causes of death at all ages, and 39 per cent. of the deaths from 15 to 60 years of age.

The diseases of the fourth group, or those of the Brain, Nerves, &c., vary considerably in their rate of fluctuation; Inflammation of the Brain, Apoplexy, and Palsy, and the less defined group of Diseases of the Brain, presenting a very moderate rate of fluctuation. On the other hand, the very considerable class of "Convulsions" presents a very high rate of fluctuation.

The fifth and sixth groups, consisting of Diseases of the Heart and of the Lungs, are characterized by a moderate rate of fluctuation, ranging from a minimum of 8.13 to a maximum of 22.12.

The diseases of the seventh group, or those of the Digestive Organs, with the single exception of the small class of Diseases of the Spleen, also present a very moderate rate of fluctuation, the minimum being 8.86, and the maximum 23.53.

The remaining groups do not demand special notice. The columns of fluctuation contain no figures calculated to arrest the attention.

The object with which this communication was taken in hand is sufficiently answered by the publication of the five tables in the Appendix, which, it is believed, will be found very useful for purposes of reference; and by the running commentary which constitutes the text. I may yet take an opportunity of turning to other account the figures contained in the tables which form the Appendix.

APPENDIX.

TABLE I.
Births and Deaths (in 1,000,000 Inhabitants) in 365 days.

Years	1840.	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	1850.	1851.	1852.	1853.	1854.	Average of the 15 Years.	Mean Fluctua- tion.	Extreme Fluctua- tion.
Marriages.....	9,994	9,888	9,518	9,733	10,058	10,685	10,727	9,671	9,408	9,716	10,490	10,913	10,966	...	...	10,136	3.75	14.20
Births	30,348	30,618	31,512	31,357	31,716	31,864	33,155	30,621	31,920	31,916	32,011	32,894	33,340	33,431	33,736	32,038	1.95	10.04
Deaths	25,187	24,179	23,652	24,929	24,860	23,375	23,290	27,085	25,812	30,078	20,925	23,382	22,457	24,303	29,351	24,864	9.51	30.38
Excess of Births over Deaths	5,161	6,439	7,860	6,428	6,856	8,489	9,865	3,536	6,108	1,838	11,086	9,512	10,883	9,038	4,385	7,164	...	...

TABLE II.
Births and Deaths—Males and Females (in 1,000,000 Inhabitants) in 365 days.

Years	1840.	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	1850.	1851.	1852.	1853.	1854.	Average of the 15 Years.	Mean Fluctua- tion.	Extreme Fluctua- tion.
Births {	Males	15,461	15,643	16,188	15,997	16,344	16,756	15,566	16,276	16,325	16,283	16,849	16,999	17,133	17,101	16,338	2.05	9.75
	Females	14,885	14,974	15,324	15,358	15,471	16,398	15,055	15,643	15,590	15,727	16,044	16,339	16,296	16,633	15,689	2.10	10.52
Deaths {	Males	12,960	12,279	11,949	12,862	12,636	11,833	13,599	13,137	14,948	10,531	11,863	11,538	12,561	14,810	12,629	9.26	29.55
	Females	12,206	11,901	11,734	12,119	12,175	11,457	13,487	12,683	15,110	10,393	11,514	10,920	11,833	14,547	12,240	9.88	31.22

TABLE III.
Deaths at Three Ages (in 100,000 Inhabitants) in 365 days.

Years	1840.	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	1850.	1851.	1852.	1853.	1854.	Average of the 15 Years.	Mean Fluctua- tion.	Extreme Fluctua- tion.
0-15	11,758	11,053	11,125	11,938	11,928	10,947	10,570	11,882	12,710	13,356	9,205	10,864	10,218	11,285	13,755	11,499	9.65	33.07
15-60	8,354	8,098	7,760	7,891	8,009	7,660	7,955	8,949	8,334	11,021	7,049	7,603	7,367	7,923	9,990	8,263	11.38	36.04
60 and upwards	5,034	4,948	4,756	5,004	4,875	4,742	4,759	6,236	4,659	5,701	4,562	4,795	4,348	4,995	5,391	4,987	10.84	30.28

TABLE IV.
Deaths in Five Districts (in 1,000,000 Inhabitants) in 365 days.

Years	1840.	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	1850.	1851.	1852.	1853.	1854.	Average of the 15 Years.	Mean Fluctua- tion.	Extreme Fluctua- tion.
West	3,774	3,524	3,571	3,701	3,740	3,548	3,416	3,827	3,708	4,123	3,114	3,517	3,435	3,562	4,579	3,676	8.49	31.97
North	4,677	4,410	4,473	4,639	4,594	4,183	4,378	5,135	4,760	4,555	4,948	4,587	4,420	4,954	5,137	4,670	5.67	18.58
Central	4,957	4,984	4,642	4,900	4,177	4,430	4,165	4,911	4,388	4,764	3,556	4,002	3,863	4,018	4,385	4,402	9.45	28.65
East	5,476	5,342	5,203	5,624	5,401	5,146	5,046	6,024	5,887	6,516	4,467	4,959	4,743	5,455	6,153	5,435	9.56	31.66
South	6,302	5,919	5,794	6,065	6,554	6,070	6,283	7,200	5,073	9,781	5,736	6,286	5,112	6,647	9,304	6,555	21.50	48.20

TABLE
Deaths in Seventeen Classes (in 1,000,000)

CAUSES OF DEATH.	1840.	1841.	1842.	1843.	1844.	1845.	1846.	1847.
ALL CAUSES.....	25,206	24,197	23,699	24,947	24,878	23,592	23,306	27,105
SPECIFIED CAUSES.....	24,946	23,964	23,463	24,735	24,773	23,306	23,220	27,044
<i>Diseases:</i>								
1. Zymotic Diseases.....	4,575	4,226	4,046	5,160	5,520	4,636	4,549	6,285
2. Dropsy, Cancer, and } others of uncertain } seat	1,791	1,649	1,612	1,499	1,415	1,243	1,017	1,072
3. Tubercular Diseases..	5,113	5,038	4,858	4,881	4,680	4,465	4,643	4,462
4. Of Brain, Nerves, &c.	3,328	3,110	3,016	3,041	3,134	2,918	2,936	2,961
5. Of Heart, &c.	543	530	548	634	786	832	846	952
6. Of Respiratory Organs	3,491	3,511	3,441	3,604	3,661	3,683	3,411	4,998
7. Of Digestive Organs..	1,742	1,693	1,640	1,695	1,530	1,547	1,629	1,604
8. Of Kidneys	134	125	169	163	185	232	257	284
9. Of Uterus; viz. Pu- } erperal Dis., &c. }	257	272	233	271	252	284	317	336
10. Of Joints, Bones, } viz. Rheumatism, } &c.	171	134	146	168	164	166	236	247
11. Of Skin, &c.	13	10	20	16	11	26	41	43
12. Malformations.....	25	19	23	43	43	63	91	87
13. Debility from Pre- } mature Birth, &c. }	602	595	601	530	502	474	548	564
14. Atrophy.....	171	194	239	264	322	360	564	628
15. Age	1,884	1,803	1,753	1,816	1,601	1,435	1,064	1,405
16. Sudden	400	406	455	343	292	257	200	302
17. Violence, Privation, } &c.	706	649	663	607	675	685	841	814
1. Small-pox	673	563	188	225	890	440	122	428
Measles.....	617	520	677	741	583	1,122	355	797
Scarlatina.....	1,064	354	641	959	1,494	525	441	643
Whooping Cough	532	1,217	839	980	637	879	966	718
Croup	204	209	229	200	203	170	132	132
Thrush	170	139	129	141	128	119	118	93
Diarrhoea	246	248	369	428	348	407	1,022	886
Dysentery	38	42	79	139	62	48	74	138
Cholera	33	15	62	44	32	21	108	52
Influenza	38	118	41	53	66	35	55	562
Purpura, Scurvy.....	9	6	8	7	10	12	13	36
Ague	5	8	10	11	14	8	9	15
Remittent Fever.....	16	9	9	12	16	15	34	43
Infantile Fever	12	12	9	13	13	15	26	22
Typhus	687	615	615	1,070	837	630	833	1,428
Erysipelas	169	134	123	113	158	149	165	235
Syphilis.....	11	15	16	23	28	40	56	57
Hydrophobia	1	2	2	1	1	1	...	...
2. Hæmorrhage	93	94	94	85	91	74	80	96
Dropsy	1,137	1,030	1,026	913	822	650	358	430
Abscess	117	90	71	55	51	31	31	37
Ulcer	13	13	13	11	13	14	25	36
Fistula	9	7	6	13	5	8	12	6
Mortification	146	129	94	115	99	91	84	87
Cancer	254	253	270	281	308	352	402	353
Gout	22	33	38	26	26	23	25	27
3. Scrofula	58	56	57	72	79	86	146	125
Tabes Mesenterica...	135	139	149	231	238	287	409	444
Phthisis	3,941	3,914	3,740	3,649	3,503	3,258	3,271	3,144
Hydrocephalus	979	929	912	929	870	834	817	749

V.

Inhabitants,) in 365 days.

1848.	1849.	1850.	1851.	1852.	1853.	1854.	Average of the 15 Years.	Mean Fluctua- tion.	Extreme Fluctua- tion.
25,831	30,080	20,940	23,399	22,474	24,411	29,380	24,883	9.51	30.38
25,716	29,945	20,790	23,235	22,304	24,140	29,105	24,712	9.55	30.57
7,938	12,302	4,135	5,234	4,904	5,315	10,541	5,957	31.24	67.11
1,026	1,029	935	996	986	1,040	1,038	1,226	5.22	45.00
4,155	3,949	3,680	4,152	4,068	4,191	4,071	4,427	4.25	28.02
2,720	2,743	2,573	2,564	2,487	2,662	2,657	2,858	3.50	25.27
760	848	847	918	894	936	909	785	8.02	44.33
3,615	3,625	3,371	3,986	3,497	4,319	4,011	3,747	11.26	31.15
1,438	1,379	1,273	1,350	1,340	1,335	1,365	1,504	4.25	26.92
275	257	263	255	274	296	297	231	7.80	57.91
346	319	288	263	274	234	258	280	9.30	32.66
186	200	205	198	216	199	203	189	10.60	45.75
39	33	37	37	54	50	70	33	23.34	85.71
96	75	76	68	82	75	80	63	15.84	80.21
511	552	568	657	652	643	689	579	5.01	31.20
573	590	494	556	554	720	826	470	14.68	79.30
969	985	980	987	956	969	911	1,298	10.71	51.64
264	314	291	218	179	198	260	292	17.46	60.66
805	745	774	846	887	958	889	769	6.89	36.64
725	228	215	451	483	87	269	399	69.92	90.22
512	507	421	559	249	402	558	575	41.74	69.92
2,132	943	507	536	1,057	825	1,371	899	59.51	83.40
730	1,031	678	913	649	1,058	985	857	31.04	52.17
130	142	132	133	122	149	195	167	8.98	43.23
94	78	63	69	65	66	72	103	10.68	62.94
857	1,522	812	960	897	921	1,290	747	29.45	83.83
150	163	78	72	63	65	70	85	34.12	76.68
292	6,209	55	90	67	351	4,269	780	153.97	99.76
295	56	47	150	49	45	41	110	95.45	93.77
28	24	19	22	23	22	22	17	23.53	83.33
15	12	8	8	7	10	10	10	.23	66.66
43	35	38	52	38	41	49	30	.22	82.70
20	16	19	25	19	21	18	17	.20	65.38
1,600	1,090	829	992	897	1,057	1,064	951	23.65	61.66
260	202	161	147	141	129	179	164	17.68	56.54
55	44	53	55	58	66	76	43	.15	85.52
...	...	...	...	...	...	3	0.73	38.35	66.66
79	90	94	76	97	84	77	87	11.61	22.92
363	350	336	346	336	337	356	588	12.41	70.45
44	40	38	38	41	51	49	52	16.39	73.50
25	25	23	20	21	22	28	20	18.08	69.44
8	7	8	10	6	12	10	8	41.87	61.54
96	81	78	96	72	81	85	95	13.68	50.70
392	382	383	385	388	432	407	349	6.60	41.20
19	24	25	25	25	21	26	25	16.17	50.00
165	156	131	161	185	177	178	132	14.75	69.75
384	370	324	343	347	384	438	307	12.70	69.55
2,939	2,777	2,645	2,970	2,875	2,992	2,833	3,230	4.45	32.88
667	646	580	678	661	638	622	767	6.00	40.75

TABLE V.—
Deaths in Seventeen Classes (in 1,000,000)

CAUSES OF DEATH.	1840.	1841.	1842.	1843.	1844.	1845.	1846.	1847.
4. Cephalitis	335	329	311	306	314	287	291	275
Apoplexy	477	463	426	475	564	548	607	587
Paralysis	452	401	406	437	442	429	478	507
Delirium Tremens ...	46	44	40	49	47	55	73	70
Chorea	2	3	2	1	6	4	1	2
Epilepsy	120	97	99	99	109	124	149	168
Tetanus	14	11	8	9	14	10	9	6
Insanity	29	23	24	24	36	33	44	50
Convulsions	1,625	1,484	1,452	1,387	1,350	1,159	990	1,013
Disease of Brain, &c.	228	255	248	254	252	269	294	283
5. Pericarditis	20	16	17	28	57	46	39	49
Aneurism	27	19	13	19	20	30	26	32
Disease of Heart, &c.	496	495	518	587	709	756	781	871
6. Laryngitis	14	14	10	23	25	38	57	93
Bronchitis	271	355	355	415	578	516	1,154	1,948
Pleurisy	47	50	39	46	47	61	69	110
Pneumonia	2,057	1,960	2,054	2,169	2,005	1,886	1,496	1,924
Asthma	728	732	581	552	585	532	381	605
Disease of Lungs.....	374	410	402	399	421	350	254	318
7. Teething	524	488	478	490	358	348	230	254
Quinsey	40	38	33	49	53	26	26	39
Gastritis	532	511	521	449	30	30	47	45
Enteritis					374	313	260	239
Peritonitis					56	76	101	121
Ascites	35	32	34	39	44	42	50	48
Ulceration of Intes- } tines	23	17	16	31	44	42	50	48
Hernia	38	40	41	54	34	63	74	58
Ileus	49	55	49	47	51	46	69	80
Intussusception	37	69	65	53	67	55	68	70
Stricture of Intes- } tines	14	7	4	12	12	17	21	26
Disease of Stomach, } &c.....	15	14	11	11	10	14	18	14
Disease of Pancreas...	137	96	101	139	137	144	179	163
Hepatitis	1	1	...	...	1	1	2	1
Jaundice	32	32	27	37	40	64	104	96
Disease of Liver	52	59	55	61	64	57	68	62
Disease of Spleen.....	211	233	200	219	197	247	304	287
	2	1	5	4	2	4	8	1
8. Nephritis	12	14	10	13	11	12	13	11
Ischuria	7	4	3	3	1	...	3	6
Diabetes	8	10	10	9	11	21	11	15
Stone	14	9	10	6	13	18	15	19
Cystitis	8	6	10	7	7	8	11	12
Stricture of Urethra..	9	8	21	23	29	27	25	25
Disease of Kidneys, } &c.....	76	74	105	102	113	146	179	196
9. Paramenia	5	5	6	8	2	8	8	8
Ovarian Dropsy	6	10	7	13	12	14	24	21
Childbirth	188	184	165	192	173	195	212	228
Disease of Uterus, &c.	58	73	52	58	65	67	73	79
10. Arthritis	2	1	...	3	1	5	4	6
Rheumatism	75	64	62	64	65	69	128	120
Disease of Joints, &c.	94	69	84	101	98	92	104	121
11. Carbuncle.....	1	1	3	3	2	4	1	7
Phlegmon	4	3	2	1	2	5	15	14
Disease of Skin, &c...	8	6	15	12	7	17	25	22
Causes not specified..	260	233	236	212	105	86	86	61

Continued.

Inhabitants,) in 365 days.

1848.	1849.	1850.	1851.	1852.	1853.	1854.	Average of the 15 Years.	Mean Fluctua- tion.	Extreme Fluctua- tion.
232	242	226	227	219	229	253	280	5.00	34.63
555	549	572	528	482	534	527	524	7.06	29.82
474	487	497	449	423	483	509	458	6.11	21.22
63	72	67	55	51	58	65	57	12.16	45.21
3	1	6	4	4	4	5	3	54.54	83.33
134	150	123	137	153	165	150	132	12.12	41.07
6	11	8	9	10	4	7	9	31.11	71.43
42	39	41	47	47	53	46	38	13.16	56.60
931	906	760	856	841	871	855	1,098	60.92	53.23
280	286	273	252	257	261	270	264	4.16	22.45
54	53	53	58	48	37	52	42	20.40	72.41
31	37	38	34	29	41	35	29	18.73	68.30
675	758	756	826	817	858	822	715	8.13	43.17
84	84	81	84	84	95	131	61	17.45	92.37
1,358	1,425	1,415	1,687	1,552	2,083	1,814	1,148	22.12	87.00
79	66	56	80	64	67	62	63	20.63	64.54
1,568	1,579	1,340	1,557	1,356	1,571	1,585	1,740	10.92	38.22
297	289	313	345	260	332	264	452	19.47	61.28
229	182	166	183	161	171	155	282	10.99	63.18
207	242	215	253	234	268	292	325	12.48	60.50
39	36	31	31	23	22	28	34	17.65	58.49
43	38	42	44	33	30	33	316	8.86	69.74
209	179	160	153	163	131	129			
118	95	94	92	88	77	81	176	13.16	73.55
52	47	48	56	52	62	59	43	13.95	74.20
59	51	41	49	58	56	57	52	18.13	54.05
65	57	55	58	57	59	59	57	11.02	42.50
56	54	57	60	60	64	65	60	13.80	47.14
21	26	19	16	19	18	19	17	23.53	84.62
13	15	20	18	18	15	20	15	16.33	50.00
153	132	107	122	121	119	111	131	12.21	46.87
2	...	...	2	...	1	3	...	...	...
89	76	84	80	86	86	85	68	13.23	74.04
62	71	61	70	77	62	73	64	11.72	32.47
245	254	234	241	244	260	245	241	9.83	35.20
5	5	5	5	7	5	6	4	50.00	87.50
9	10	12	14	12	14	17	12	16.66	47.06
4	4	4	6	5	4	4	4	34.00	85.71
20	18	19	17	20	22	25	16	21.00	68.00
13	13	13	11	14	15	13	13	23.08	68.42
16	18	13	11	15	14	15	12	20.32	66.66
25	16	20	20	23	26	25	21	19.05	72.41
188	178	182	176	185	201	198	153	8.50	63.18
5	7	5	3	6	4	2	5	40.00	75.00
20	22	26	19	19	18	23	17	21.41	76.92
256	221	191	174	187	156	173	193	10.88	39.06
65	69	66	67	62	56	60	65	10.77	34.17
2	3	3	5	8	6	4	3	57.14	87.50
120	119	127	118	133	117	128	101	10.00	53.38
64	73	75	75	75	76	71	85	14.12	47.11
9	7	8	8	21	28	36	9	33.33	97.22
10	10	11	10	13	9	14	8	32.12	93.33
20	16	18	19	20	13	20	16	28.56	76.00
115	135	150	164	170	271	275	170	17.65	77.83

On the Progress, Extent, and Value of the Coal and Iron Trade of the West of Scotland. By JOHN STRANG, LL.D.

[Read before the Statistical Section of the British Association at Glasgow, September, 1855.]

THE rapid progress which has of late years characterised some of the now largest cities of Great Britain is mainly due to the mineral wealth which surrounds them; to the existence, in fact, of those vast repositories of fuel, or of metals, which nature has laid up for the use of man in the bowels of the earth. If one only casts his eye over a geological map of this island, he will find, in England, a Birmingham, a Newcastle, a Preston, and a Manchester, placed in the midst of extensive coal fields; and, on looking at Scotland, he will at once discover, amid the general thinness of habitation and population, at least one fully peopled district, in the centre of which stands the no less important manufacturing and commercial city of Glasgow, surrounded on every side by the richest strata of coal, iron, and lime. To the mineral wealth which exists in this portion of Scotland may be mainly attributed the prominent position which its western metropolis has lately taken in the commerce and manufactures of the world, and which the following statistical facts connected with the progress, extent and value, of the coal and iron trades of the west of Scotland, of which that city is the central mart, may, perhaps, in some degree, better illustrate.

Although coals have, from a pretty remote period, been wrought around Glasgow, chiefly for domestic use, yet it has only been since the introduction of the steam engine, and still more since the discovery of the economical mode of smelting iron by the hot-blast, that the vast and closely packed mineral wealth of its neighbouring districts has been at all fully developed and turned to great profit. Even so late as in the year 1831, the quantity of coals brought to Glasgow, was only about 560,000 tons, and of that quantity 120,000 were exported, thereby leaving 440,000 tons for domestic uses, steam-boats, public works and factories in the city and suburbs; while the quantity consumed, as well as the ironstone smelted in the comparatively few furnaces then in blast, was small and unimportant. The contrast, indeed, of the state of the coal and iron trades only five-and-twenty years ago with that of the present moment is most striking. From the returns obtained through Mr. Williams, the Inspector of Mines for Scotland, it appears that in 1854, there were 367 collieries in Scotland, 237 of which belong to the west country, 141 being in Lanarkshire, 78 in Ayrshire, 11 in Dumbarton, and 7 in Renfrew. It also appears that during the same year there were 7,448,000 tons of coals raised in Scotland, and of these about 6,448,000 were drawn from pits situated in the four western counties above alluded to. Taking into account all kinds of coals raised, such as splint, soft, and gas, the average price may be fairly estimated at 7s. 6d. per ton, which shows the produce derived from the coal mines of the west of Scotland, in 1854, to have been about 2,418,000*l.* sterling.

Of the coals so produced

2,152,800 tons	were consumed in the manufacture of pig iron.
367,200	„ „ conversion of pig into malleable.

Making in all 2,520,000 tons used in connection with the manufacture of iron.

while 926,221 tons were shipped, and 148,312 tons were sent beyond the boundaries northward and southward, per railways, leaving for the manufacturing consumption, steam-boats, and domestic uses of Glasgow, 2,853,427 tons. During the same period the number of persons employed in the collieries, producing this quantity of fuel, was as follows:—

In Lanarkshire	15,580
„ Ayrshire	6,061
„ Renfrewshire	790
„ Dumbartonshire	549

In all 22,980

If the great developement of the coal trade, as we have seen, has been of recent origin, the manufacture of iron in Scotland is still more modern, having obtained its present almost marvellous position during the course of the last few years. So late as in 1830, there were only 16 blast furnaces in the West of Scotland, and the whole produce scarcely reached 40,000 tons. It appears, however, that during the year 1854, of the 118 furnaces for the smelting of iron ore, then in full blast in Scotland, and producing 796,640 tons of pig iron, 102 were situated in the two western counties of Lanark and Ayr, 72 being in the former and 30 in the latter, and the produce of these amounted to 717,600 tons. Taking the average price, during that twelvemonth, as 79s. 8d. per ton, the gross value of this industry is shewn to have been 2,858,440*l*. Of this very large quantity of pig iron produced in the west of Scotland, 122,684 tons were shipped direct to foreign countries, and 294,194 tons were sent coastwise from the Clyde, Port Dundas, and the western ports of the Clyde estuary; while 22,865 were sent away by railways; and 171,360 were converted into malleable iron; leaving the remaining 106,497 tons for foundry and other purposes of the district. The number of men employed in iron mining in the district, during 1854, were 3,645 in Lanarkshire, and 1,943 in Ayrshire, making in all 5,588, whose wages, at 22s. per week, shew an annual expenditure on wages of 319,633*l*. 12s., while the number of men employed in managing and working the furnaces amounted to 1,344, who were paid on an average 4s. 6d. per day, or an annual aggregate sum of 110,376*l*.

But if the manufacture of pig iron be a modern industry in the west of Scotland, assuredly that of malleable iron is still more recent; for, with the exception of a small work at Wilsontown, which was unsuccessfully attempted there at a somewhat remote period, almost nothing was done in this manufacture till 1839; and even so late as in 1842, the production did not exceed 35,000 tons. During the year 1854, however, the manufacture of malleable iron reached 122,400 tons; and taking the average price of all sorts, including plates for shipbuilding, to have then been 10*l*. per ton, the

gross amount of this industry was 1,224,000*l*. The number of men employed in this branch, was about 4000, and the rate of wages paid was 28*s*. per week, showing an annual aggregate amount paid in wages to have been 291,200*l*.

Assuming then all these statements to be as correct as perhaps they can possibly be made, let us now see what was the real value, to the west of Scotland, of the whole of these industries in 1854.

Value of coal	£2,418,000
Value of pig iron	£2,858,440
Deduct value of coal used in smelting, say	
3 tons of coal for each ton of pig, or	807,300
2,152,800 tons, at 7 <i>s</i> . 6 <i>d</i>	
	<hr/> 2,051,140

Value of malleable iron	£1,224,000
Deduct value of pig iron used,	
say 171,360 tons at 79 <i>s</i> . 8 <i>d</i> . } £682,584	
Deduct value of coals used in	
conversion from pig into	
malleable, say 367,200 tons } 137,700	
at 7 <i>s</i> . 6 <i>d</i>	
	<hr/> 820,284
	<hr/> 403,716

Net value of coal and iron £4,872,856

We find also from the foregoing statements that the number of persons employed in these industries, and the wages paid, were as follows:—

Employed in Collieries	22,980	at 21 <i>s</i> . per week =	£1,254,708
„ Iron mining	5,588	„ 22 <i>s</i> . „ =	319,633
„ Attending furnaces...	1,344	„ 4 <i>s</i> . 6 <i>d</i> . per day =	110,376
„ Malleable iron works	4,000	„ 28 <i>s</i> . per week =	291,200
	<hr/> 33,912		<hr/> £1,975,917

In short, the foregoing tables shew that the coal and iron works of the west of Scotland, of which Glasgow is the great central mart, produced no less a sum to those connected with these establishments than 4,872,856*l*., and gave employment to 33,912 persons, who received for their labour wages to the amount of 1,975,917*l*.

When the magnitude of these figures and the value which they bear on the social and economical condition of this great mining and manufacturing district are calmly considered, it will not be difficult to arrive at one of the main sources of the lately greatly increased wealth of Glasgow and its vicinity, or to account for one of the chief causes of attraction to the industrious mechanics and labourers, from all parts of the country, which have already rendered the united counties of Lanark, Ayr, Renfrew, and Dumbarton, one of the most thickly peopled and well conditioned portions of Great Britain.

A Ten Years' Retrospect of London Banking.

By JAMES WILLIAM GILBART, F.R.S.

[Read before the Statistical Society, on Monday, the 16th of April, 1855.]

By the last Bank Charter Act (7 & 8 Vic., c. 32, s. 21), passed in the session of 1844, it was enacted "that every banker in England and Wales, who is now carrying on, or shall hereafter carry on business as such, shall on the first day of January, in each year, or within fifteen days thereafter, make a return to the Commissioners of Stamps and Taxes, at their head office in London, of his name, residence, and occupation, or in the case of a company or partnership, of the name, residence, and occupation of every person composing or being a member of such company or partnership, and also the name of the firm under which such banking company or partnership carry on the business of banking, and of every place where such business is carried on; and if any such banker, company, or partnership, shall omit or refuse to make such return within fifteen days after the said first day of January, or shall wilfully make other than a true return of the persons as herein required, every banker, company, or partnership, so offending, shall forfeit and pay the sum of 50*l.*; and the said Commissioners of Stamps and Taxes shall, on or before the first day of March, in every year, publish in some newspaper circulating within each town or county, respectively, a copy of the return so made by every banker, company, or partnership, carrying on the business of bankers within such town, or respectively, as the case may be."

This was the first time that any of the banking companies in London were required to make returns to Government of the number or names of their partners. All banks that issued notes were required, when they applied for a license, to name their partners; but, as none of the London bankers issued notes, they required no license and made no return. Nor did the Joint Stock Banks, established in London, make any returns to the Government of their partners. For as they did not previously possess the power of suing and being sued, in the name of their public officers, they did not register at any government office the names of their partners, though in some cases these names were appended to the Annual Reports of the Directors. This Act (7 & 8 Vic., c. 32), came into operation in January, 1845, and we have now, therefore, the means of obtaining annually the names of all the partners in all the banking establishments throughout England and Wales.

The Act not only requires that the bankers shall make these returns between the first and fifteenth of January, in each year, it requires also that the Commissioners of Stamps and Taxes shall

publish them before the first of March following, in some newspaper that circulates within the town or county in which the bankers making the return carry on their business. The returns from the London banks are published in supplements to the London Gazette, which, we presume, is considered to be a newspaper within the meaning of the Act. The first publication took place in 1845, and the last in 1855, so that by comparing these two returns, we have the means of observing the changes that have taken place in London banking during the last ten years.

The London banking establishments consist of private partnerships, each not having more than six partners; and of public companies which are usually styled Joint Stock Banks.

The former may be divided into three classes:—

1. Those which are members of the Clearing House.
2. Those located east of Temple Bar, but not members of the Clearing House.
3. Those located west of Temple Bar.

We shall take them in order, and state the returns for 1845 and 1855, respectively.

TABLE I.

A List of those London Private Banking Firms who attended the Clearing House in 1845.

	Name of the Firm.	Address.	Number of Partners
1	Barclay, Bevan, and Tritton and Co.	Lombard-street	6
2	Barnard, Dimsdale, and Co.	50, Lombard-street	4
3	{ Barnett, Hoares, Barnett, Bradshaw, } and Co.	Lombard-street	6
4	Bosanquet, Franks, and Whatman	73, Lombard-street	3
5	Brown, Janson, and Co.	Abchurch-lane	5
6	Curries and Co.	29, Cornhill	5
7	Denison, Heywood, Kennard, and Co.	4, Lombard-street	4
8	Fullers and Co.	65, Moorgate-street	2
9	Glyn, Halifax, Mills, and Co.	67, Lombard-street	6
10	Hanbury, Taylor, and Lloyd	60, Lombard-street	5
11	Hankey	7, Fenchurch-street	4
12	Jones Loyd and Co.	Lothbury	4
13	Lubbock, Forster, and Co.	11, Mansion House-street	3
14	Martin, Stone, and Martins	68, Lombard-street	5
15	{ Masterman, Peters, Mildred, Master- } man, and Co.	{ 34 and 35, Nicholas-lane, } Lombard-street	6
16	Prescott, Grote, Ames, and Co.	62, Threadneedle-street	4
17	Price, Marryatt, and Co.	King William-street	3
18	Roberts, Curtis, Robarts, Curtis, and Co.	15, Lombard-street	4
19	Rogers, Olding, Sharpe, Boycott, and Co.	29, Clement's-lane	5
20	Sapte, Banbury, Muspratt, and Co.	77, Lombard-street	4
21	Smith, Payne, and Smith	1, Lombard-street	5
22	Spooner, Attwood, and Co.	27, Gracechurch-street	2
23	Stevenson, Salt, and Son	20, Lombard-street	3
*24	Weston and Young	6, Wellington-st., Southwark	2
25	Williams, Deacon, and Co.	Birchin-lane	6
26	Willis, Percival, and Co.	76, Lombard-street	6
Total number of Partners			112

TABLE I.

A List of those London Private Banking Firms who attended the Clearing House in 1855.

	Name of the Firm.	Address.	Number of Partners
1	Barclay, Bevan, Tritton, and Co.	54, Lombard-street	4
2	Barnett, Hoare, Barnett, and Co.	Lombard-street	5
3	Bosanquet, Franks, and Co.	73, Lombard-street	4
4	Brown, Janson, and Co.	London	5
5	Curries and Co.	29, Cornhill	6
6	Dimsdale, Drewett, Fowler, and Barnard	50, Cornhill	4
7	Fullers and Co.	66, Moorgate-street	2
8	Glyn, Mills, and Co.	67, Lombard-street	6
9	Hanbury and Lloyd	60, Lombard-street	5
10	Hankey and Co.	Fenchurch-street	4
11	Heywood, Kennards, and Co.	4, Lombard-street	3
12	Jones Loyd and Co.	43, Lothbury	4
13	Lubbock, Forster, and Co.	Mansion House-street	3
14	Martin and Co.	68, Lombard-street	3
15	{ Masterman, Peters, Mildred, Master- } man, and Co.	{ Nicholas-lane, Lombard- } street	5
16	Prescott, Grote, Cave, and Cave	62, Threadneedle-street ...	5
17	Price, Marryatt, and Co.	King William-street	2
18	Robarts, Curtis, and Co.	15, Lombard-street	4
19	Rogers, Olding, and Co.	Clement's-lane	4
20	Sapte, Muspratt, Banbury, Nix, and Co.	77, Lombard-street	4
21	Smith, Payne, and Smiths	Lombard-street	6
22	Spooner, Attwoods, and Co.	27, Gracechurch-street	3
23	Stevenson, Salt, and Sons	20, Lombard-street	3
24	{ Williams, Deacon, Labouchere, Thorn- } ton, and Co.	Birchin-lane	5
25	Willis, Percival, and Co.	76, Lombard-street	4
Total number of Partners			103

On comparing the above tables, we find that there were 26 clearing firms in the year 1845, and only 25 in the year 1855. The firm omitted in the second table is that of Messrs. Weston and Young. This firm was afterwards changed to Young and Son, and, on the death of the son in the year 1847, Mr. Young honourably retired from the bank, and the business was transferred to the Southwark branch of the London and Westminster Bank. It will further be observed that the remaining 25 clearing firms consisted, in 1845, of 110 partners; and, in 1855, of 103 partners. It will further be observed, with reference to the above and the succeeding tables, that in comparing two tables of the same class referring to the years 1845 and 1855, we have placed an asterisk against those names that are found in one of these tables, but not in the other.

TABLE II.

A List of those Private Banking Firms, East of Temple Bar, who were not Members of the Clearing House in 1845.

	Name of the Firm.	Address.	Number of Partners
* 1	Abraham Bauer and Co.	71, King William-street	1
2	William and John Biggerstaff	1, West Smithfield	2
* 3	James Bult, Son, and Co.	85 and 86, Cheapside	3
4	Messrs. Child and Co.	1, Fleet-street	5
5	Roger Cunliffe	Lombard-street	1
6	Cunliffe, Brooks, and Co.	Lombard-street	3
7	Robert Davies and Co.	187, High-street, Shoreditch ..	2
8	Dixon, Brooks, and Dixon	25, Chancery-lane	3
* 9	Drewett and Fowler	4, Princes-street	2
10	John Feltham and Co.	42, Lombard-street	2
11	Gosling and Sharpe	19, Fleet-street	4
12	C. Hill and Sons	West Smithfield	3
13	Charles Hoare and Co.	37, Fleet-street	5
14	H. and J. Johnson and Co.	Great Bush-lane	3
*15	Jones and Son	41, West Smithfield	1
16	Pocklington and Lacy	60, West Smithfield	2
17	Praeds and Co.	189, Fleet-street	4
18	Puget, Bainbridges, and Co.	12, St. Paul's-churchyard ..	4
*19	Smithfield Agency Banking Company ..	59, West Smithfield	2
*20	William Henry Stallard	76, West Smithfield	1
21	Thomas G. Tisdall	15, West Smithfield	1
Total number of Partners			54

A List of those Private Banking Firms, East of Temple Bar, who were not Members of the Clearing House in 1855.

	Name of the Firm.	Address.	Number of Partners
1	W. and J. Biggerstaff	West Smithfield	2
* 2	John Brown and Co.	25, Abchurch-lane	1
* 3	Challis and Son	37, West Smithfield	2
4	Child and Co.	1, Fleet-street	6
5	Cunliffes and Co.	24, Lombard-street	4
6	Roger Cunliffes, Son, and Co.	24, Bucklersbury	3
7	Robert Davies and Co.	187, Shoreditch	2
8	Dixon, Brooks, and Dixon	25, Chancery-lane	3
9	John Feltham and Co.	42, Lombard-street	2
10	Goslings and Sharpe	19, Fleet-street	5
11	C. Hill and Sons	17, West Smithfield	2
12	Messrs. Hoare	37, Fleet-street	2
13	Hugh and John Johnston and Co.	28, Cannon-street	3
14	Lacy and Son	60, West Smithfield	2
15	Praeds and Co.	189, Fleet-street	4
16	Puget, Bainbridges, and Co.	12, St. Paul's-churchyard ..	4
*17	John Shank	76, West Smithfield	1
*18	Adam Spielmann and Co.	10, Lombard-street	1
*19	J. and W. S. Stride	41, West Smithfield	2
20	Tisdall and Ward	15, West Smithfield	2
*21	Charles Twigg and Co.	29, Great St. Helens	1
Total number of Partners			54

On comparing these tables we find that the number of firms and the number of partners are the same in 1855 as in 1845. But, on going through the names individually, we find that six firms which appear in the table for 1845 do not appear in the table for 1855. And that six new firms are in the table for 1855, which were not in the table for 1845. The firms which appear in the first table, but not in the second, are numbers 1, 3, 9, 15, 19, 20. The firm No. 1 (Bauer & Co.), consisted of only one person, who was rather an exchange broker than a banker in the London sense of the term. The firm No. 3 (Bult & Co.), still carry on business as Bullion dealers, but have ceased to register as bankers. The firm No. 9 (Drewett & Fowler) united with the clearing firm No. 2, Messrs. Barnard, Dimsdale, & Co., and the united firm is now No. 6, Messrs. Dimsdale, Drewett, Fowler, and Barnard. The firms No. 15, 19, and 20, were all located in Smithfield. The business of the Smithfield bankers consist chiefly in transactions with cattle dealers, or others who frequent the Smithfield market. In other respects their business as bankers is very limited. They have usually themselves accounts with other bankers. These firms have, generally, only a small number of partners.

The six new firms which appear in the table for 1855, but were not in the table for 1845, are numbers 2, 3, 17, 18, 19, 21. Of these firms numbers 2, 18, and 21, consist each of only one person. The firms numbers 3, 17, and 19, are located in Smithfield; so that the number of Smithfield bankers is the same in the year 1855 as in 1845.

TABLE III.

List of the Private Banking Firms West of Temple Bar in 1845.

	Name of the Firm.	Address.	Number of Partners
1	Bouverie, Norman, and Murdock	11, Haymarket	3
2	Sir William Pratt, Call, Martin, and Co.	25, Old Bond-street	3 [†]
* 3	Cockburn and Co.	Whitehall	2
4	Cocks, Biddulph, Biddulph, and Co.	43, Charing-cross	6
5	Coutts and Co.	58 and 59, Strand	4
6	Messrs. Drummond	Charing-cross	6
7	Hallett, Robinson, and Co.	14, Great George-street	4
8	Herries, Farquhar, and Co.	16, St. James's-street	4
9	Charles Hopkinson and Co.	3, Regent-street	2
10	Ransom and Co.	Pall Mall, East	4
11	Sir Claude Scott and Co.	Cavendish-square	3
† 12	Strahan, Paul, Paul, and Bates	217, Strand	4
13	Richard Twining and Co.	215, Strand	6
Total number of Partners			51

† This house stopped payment on June 11th, 1855.

TABLE III.

List of the Private Banking Firms West of Temple Bar in 1855.

	Name of the Firm.	Address.	Number of Partners
1	Bouverie and Co.	Haymarket	4
2	Call, Martin, and Co.	25, Old Bond-street	2
3	Cocks, Biddulph, and Co.	43, Charing-cross	5
4	Coutts and Co.	58 and 59, Strand	5
5	Messrs. Drummond	Charing-cross	6
6	Hallett, Maude, and Hallett	{ Little George-street, West- minster	3
7	Herries, Farquhar, and Co.	{ 16, St. James'-street, West- minster	6
8	Charles Hopkinson and Co.	3, Regent-street, St. James's	2
9	Ransom and Co.	1, Pall Mall, East	3
10	Sir Samuel Scott, Bart., and Co.	1, Cavendish-square	2
11	Strahan, Paul, and Bates	217, Strand	3
12	R. Twining and Co.	215 and 216, Strand	4
*13	White, Ludlow, and Co.	6, Haymarket	3
Total number of Partners			48

On comparing these tables, we find that the number of banking firms west of Temple Bar, was the same in the year 1855 as in 1845; but the number of partners in 1845 was 51, and in 1855 only 48. We find also that the firm No. 3, which appeared in the table for 1845, does not appear in the table for 1855. But we find in the table for 1855 a new firm, No. 13, which did not appear in the table for 1845. The partners in this new firm are styled bankers and army agents.

The total number of London Private Banks in January, 1845, was as follows:—

26 Clearing Firms, having	112 Partners
21 Firms East of Temple Bar who did not clear	54 „
13 Do. West of Temple Bar	51 „

Total 60 Firms

Total 217 Partners

The total number of London Private Banks in January, 1855, is as follows:—

25 Clearing Firms, having	103 Partners
21 Firms East of Temple Bar who do not clear	54 „
13 Do. West of Temple Bar	48 „

Total 59 Firms

Total 205 Partners

Joint Stock Banks.

London is the head-quarters of several Joint Stock Banks which conduct their business operations in the provinces, in Ireland, or in the Colonies. But I purpose here to notice only those Joint Stock Banks which carry on business as London bankers. These in 1845 were five:—The London and Westminster Bank; The London Joint Stock Bank; The Union Bank of London; The Commercial Bank of London; The London and County Banking Company.

The following table shows the total number of partners in each of the Joint Stock Banks carrying on business in London, and the numbers resident, respectively, in London, and within a distance of fifteen miles, in other parts of England, in Scotland, in Ireland, and in other countries. Fifteen miles is the distance within which a cheque may be drawn on a Banker without the use of a stamp.

TABLE IV.

1845.

	London and Westminster Bank.	London Joint Stock Bank.	Union Bank of London.	Commercial Bank of London.	London and County Bank.	Total.
Partners resident in London and within fifteen miles.....	697	633	401	73	103	1,907
Partners in other parts of England.....	286	143	129	75	274	907
Partners in Scotland	42	10	107	4	....	163
„ in Ireland	11	1	1	2	....	15
„ abroad	7	6	7	1	....	21
Total	1,043	793	645	155	377	3,013

Classification of Shareholders in Joint Stock Banks in London, as in the last Table. January, 1855.

	London and Westminster Bank.	London Joint Stock Bank.	Union Bank.	Commercial Bank.	London and County Bank.	Royal British Bank.	Total.
Shareholders residing in London and within fifteen miles	842	728	551	230	210	98	2,659
Shareholders in the country	452	242	167	79	468	17	1,425
„ in Scotland	39	14	73	9	2	2	139
„ in Ireland	12	4	2	2	4	2	26
„ abroad	25	13	11	18	5	2	74
	1,370	1,001	804	338	689	121	4,323

From these tables it appears that the London Joint Stock Banks increased during the ten years from five to six, and that the number of partners in all the Joint Stock Banks carrying on business in London, in the year 1845, was 3013, and in 1855, 4323. Probably at both periods there were some persons who held shares in more than one bank, and hence the number of persons might be less. It also appears that, at both periods, above one third of the shareholders in the London Joint Stock Banks resided at a greater distance than fifteen miles from London.

The Act of 1844 requires the occupations, as well as the names and residences of the partners, but several of the Joint Stock Banks have omitted to return this, and others apply the words "Esquire" and "Gentleman" so indiscriminately, that it is impossible to form

any useful classification. All the banks, however, by stating the christian names, give us the number of their female partners: and all the banks, except one, state whether these interesting partners are married women, widows or spinsters. The following tables contain the number for 1845 and 1855.

TABLE V.
Female Shareholders in 1845.

	Married	Widows.	Spinsters.	Total.
London and Westminster Bank	16	60	120	196
London Joint Stock Bank	2	35	83	120
Union Bank	2	28	53	83
London and County Bank	24	4	26	54
Commercial Bank of London, which does not describe its female share- holders.....	44	127	282	453
	....	....	....	10
				463

Female Shareholders in 1855.

	Married.	Widows.	Spinsters.	Total.
London and Westminster Bank	39	135	257	431
London Joint Stock Bank	9	98	199	306
Union Bank	20	66	112	198
London and County Bank	5	29	118	152
Royal British Bank	nil.	1	7	8
Commercial Bank	73	329	693	1,095
	....	....	....	52
				1,147

From these tables it appears that, during the last ten years, the ladies have become more enamoured of Joint Stock Banks than the gentlemen, and their number has proportionably increased.

	Total Shareholders.	Gentlemen.	Ladies.	Proportion per Cent.
1845.....	3,013	2,550	463	18·1
1855.....	4,323	3,176	1,147	36·1

It will be seen that the largest proportional increase is with the widows, but the largest positive increase is with the spinsters. Among the private bankers there are only two ladies. These are, The Right Honourable Sarah Sophia Child, Countess of Jersey, a partner in the firm of Child and Co., No. 1, Fleet Street, and Ann Tisdall, a partner in the firm of Tisdall and Ward, No. 15, West Smithfield.

The following are the numbers of officers in the army, officers in

the navy, and clergymen, who were partners in London Joint Stock Banks, on the 1st day of January, 1845:—

	Officers in Army.	Officers in Navy.	Clergymen.
London and Westminster Bank....	24	13	32
London Joint Stock Bank	8	5	10
Union Bank of London	19	7	11
London and County Bank	1	1	10
Commercial Bank .....	....	....	2
	52	26	65

The following are the numbers of officers in the army, officers in the navy, and clergymen, who were partners in London Joint Stock Banks on the 1st day of January, 1855:—

	Officers in Army.	Officers in Navy.	Clergymen.
London and Westminster Bank....	20	7	53
London Joint Stock Bank	13	5	33
Union Bank of London	23	3	22
London and County Bank	4	4	25
Commercial Bank .....	....	1	8
Royal British Bank	4	....	3
	64	20	144

On comparing these tables we find that the officers in the army had, during ten years, increased from 52 to 64. The officers in the navy had decreased from 26 to 20; and the clergymen had increased from 65 to 144.

The *places* at which the London Joint Stock Banks carried on business in 1845 were as follows:—

London and Westminster Bank.

- No. 41, Lothbury, in the City of London.
- No. 1, St. James's-square, in the City of Westminster.
- No. 213, High Holborn.
- No. 3, Wellington-street, in the Borough of Southwark.
- No. 87, High-street, Whitechapel.
- No. 4, Stratford-place, Oxford-street.

London Joint Stock Bank.

- No. 5, Princes-street, Mansion-house, City of London.
- No. 69, Pall Mall, Westminster.

Union Bank of London.

- No. 8, Moorgate-street, City of London.
- Argyle-place, Regent-street.
- No. 4, Pall Mall, East.

Commercial Bank of London.

- Lothbury, in the City of London.
- Henrietta-street, Covent-garden.

London and County Banking Company.

- Lombard-street, in the City of London.
- No. 37, West Smithfield.

In January, 1855, the places remained the same, with the following exception and additions:—

The London and County Bank had withdrawn the branch at No. 37, West Smithfield, and had established branches at

St. George's place, Knightsbridge, and
Connaught-terrace, Edgware-road.

The Royal British Bank also carries on business at the following places:—

No. 16, Token-house, Lothbury.
No. 429, Strand.
No. 77, Bridge-road, Westminster-bridge.
No. 97, Goswell-road.
No. 1, Shaftesbury-terrace, Victoria-street, Pimlico.
No. 60, Stone's-end, Southwark.
No. 32, Regent-circus.

The total number of places in which the London Joint Stock Banks, respectively, carried on business in January 1845, and 1855, is as follows:—

	1845.	1855.
London and Westminster Bank	6	6
London Joint Stock Bank	2	2
Union Bank of London	3	3
Commercial Bank of London	2	2
London and County Bank	2	3
Royal British Bank .....	....	7
Total number of places	15	23

The London and County Bank also carries on business at sixty-nine places in the country. None of the other Joint Stock Banks have branches out of London. No London Private Bank has any branch.

The total number of banking co-partnerships in London, the number of partners, and the number of places where business is carried on, are as follows:—

	Number of Partnerships.		Number of Partners.		Number of Places.	
	1845.	1855.	1845.	1855.	1845.	1855.
Private Banks	60	59	217	205	60	59
Joint Stock Banks	5	6	3,013	4,323	15	23
Totals	65	65	3,230	4,528	75	82

Here we close our analysis of the banking returns published in the Gazette, under the authority of the Act of 1844. But our retrospect of London banking, for the last ten years, will be more complete if we state the amounts of the paid up capital, surplus fund, and deposits of the several Joint Stock Banks as they stood in

January, 1845, and in January, 1855. For these items we are indebted to the annual reports published by the Banks themselves.

TABLE VI.
1845.

Names of Banks.	Date.	Paid up Capital.	Surplus Fund.	Deposits.
		£	£	£
London and Westminster Bank	1st Jan., 1845	800,000	69,904	2,676,741
London Joint Stock Bank	1st Jan., 1845	600,000	90,856	2,245,330
Union Bank of London	1st July, 1844	422,900	12,900	1,591,200
Commercial Bank of London....	1st July, 1844	80,000	2,514	239,622
		1,902,900	176,174	6,752,893
London and County Bank	1st Jan., 1845	161,025	12,727	1,231,412
		2,063,925	188,001	7,984,305

1855.

Names of Banks.	Date.	Paid up Capital.	Surplus Fund.	Deposits.
		£	£	£
London and Westminster Bank	1st Jan., 1855	1,000,000	134,526	7,177,244
London Joint Stock Bank	1st Jan., 1855	600,000	156,032	6,161,154
Union Bank of London	1st July, 1854	422,900	50,000	7,031,477
Commercial Bank of London....	1st July, 1854	300,000	64,012	1,265,903
Royal British Bank.....	1st Jan., 1855	50,000	12,591	922,864
		2,372,900	417,161	22,558,642
London and County Bank	1st Jan., 1855	399,895	69,056	3,779,944
		2,772,795	486,217	26,338,586

The Union Bank of London, and the Commercial Bank of London, hold their meetings annually in the month of July. The above tables, therefore, show the condition of those banks as they stood on the 30th June, 1844 and 1854. At their last meeting, the Union Bank announced their intention to issue the remainder of their shares, by which their capital would be increased to 600,000*l.*, and their surplus fund to 100,000*l.* The London and County Bank is placed separately in the above tables because the amount of deposits includes the deposits at all their country branches. This bank, too, at their last meeting, agreed to a further issue of shares by which their capital will be raised to 500,000*l.*, and their surplus fund to 100,000*l.* The Royal British Bank are also taking steps for increasing their capital.

In June, 1854, the following Joint Stock Banks became members of the clearing house:—The London and Westminster Bank; The London Joint Stock Bank; The Union Bank of London; The Commercial Bank of London; and the London and County Bank.

Postscript.

Postscript.—Since the above Paper was read to the Society the following events have taken place in reference to London Banking:—

1. The private Bank of Messrs. Strahan, Paul, and Bates, No. 217, Strand, has stopped payment.

2. The Bank of England has opened a West End Branch in Burlington Gardens.

3. The London and Westminster Bank has opened a "Temple Bar Branch" in the house formerly occupied by Messrs. Strahan and Co.

4. The Union Bank of London has opened a Branch in Fleet Street.

5. The London and County Bank has opened a Branch in Oxford Street, and is preparing to open a Branch in High Street, Southwark.

6. A new Joint Stock Bank, called "The City Bank," has commenced business in temporary offices in the Royal Exchange Buildings, and is building a new house at the corner of Finch Lane.

7. A new Joint Stock Bank, called "The Bank of London," has commenced in the Hall of Commerce, Threadneedle Street, and has also opened a Branch in the Strand.

8. The London and Eastern Bank, which has a charter for banking in India, has, under the same charter, commenced banking in London, in King William Street, London Bridge, and has also opened a Western Branch at 136, Westbourne Terrace.

9. The National Bank of Ireland, which has an office in Broad Street for the government of its Branches in Ireland, which are all Banks of Issue, has also commenced to carry on business as London Bankers.

10. The Royal British Bank has been admitted into the Clearing House. The Southwark Branch of the London and Westminster Bank also clears in the same way as if it were an Independent Bank.

J. W. G.

Lothbury, October 10th, 1855.

*The Mining Resources of France, 1841 to 1852.**

By H. READER LACK, ESQ., *Statistical Department, Board of Trade.*

[Read before the Statistical Society, on Monday, the 21st of May, 1855.]

THE mining industry of France has made great progress of late years, and more especially during the period now under review; and there is every reason to believe that the results would have been still more favourable had not the mining interests received a severe check from the Revolution of 1848, from the effects of which they have not yet entirely recovered.

Although the production of the French mines is, at the present time, chiefly confined to coal and iron, the country is not wanting in metalliferous deposits, for, both under the dominion of the Romans, and still later of the feudal lords, mines of various kinds appear to have been worked on an extensive scale, and their abandonment in the year 1793 was mainly owing to the then unsettled state of the country.

The working of the coal mines in France to any great extent did not commence till after that date; and their production was comparatively trifling before the year 1800. Since the year 1832, however, great attention has been paid to mining operations, while a considerable increase in the production of *copper*, *silver*, and *lead*, in addition to that of *coal* and *iron*, has taken place since the year 1841.

France now produces coal and iron to a very considerable degree, and though not in sufficient quantities to supply the home demand, she ranks next to Great Britain as a coal-producing country, and occupies the first rank of the iron-making countries of continental Europe; the next in order being those of Russia, Sweden, Prussia, Belgium, and Austria. In the details of the statements which follow, the relative productions of the abovenamed countries, with reference to coal and iron, are given as far as obtainable from official documents.

It may be some guide towards forming a notion of the extent of the production of coal and iron in France, to know that that of *coal* is about *sixteen times*, and that of *iron four times*, less than the production of those minerals in Great Britain.

The consumption of *foreign coal* in France, which has largely increased since the year 1841, is nearly equal to that of the home production. The importation of iron is necessarily limited in consequence of the heavy duties imposed upon it; within the last three years, however, the import duties both on *coal* and *iron* have been greatly *reduced*, and it is to be hoped that those reductions will, by their beneficial results, go far to prove to the French government that protective duties are hindrances to national industry.

* This Paper is a continuation of one written by the late Mr. Porter, and published by the Statistical Society in 1844; the statements for the subsequent years have been taken from the official reports of the "*Direction Générale des Mines*," and from the Exhibition of 1851 Jury Reports.

Before proceeding to the detailed statements, it may be interesting to take a general survey of the *principal* mineral productions of France. The following comparative account will shew the increase in each description of metal since the year 1832.

Value of the Principal Mineral Productions of France in each of the Three Years 1832, 1841, and 1852.

Description.	1832.	1841.	1852.
	Francs.	Francs.	Francs.
Coal, Lignite and Anthracite ...	16,079,670	33,159,044	46,751,806
Iron and Steel (manufactured)	87,512,994	141,789,560	297,330,748
Silver and Lead	856,673	774,033	2,390,191
Copper.....	247,680	278,676	5,167,338
Total {			
	In Francs	104,497,017	176,001,313	351,640,083
Total {			
	In £ sterling...	4,179,880	7,040,052	14,065,603

It will be remarked, that in every instance there is a large increase in the productions of the year 1852, over those of the two former years, and that the total value of these productions in 1852 nearly doubled in amount those of the year 1841.

The detailed accounts of the mineral productions of France, are given under the three following heads of—1. *Coal Mines.* 2. *Iron Mines and Manufactures,* and 3. *Other descriptions of Metals.*

1. *Coal Mines.*

This branch of the French mining industry dates its commencement as far back as the early part of the 18th century, but it is only since the year 1800 that it has made rapid progress. The increase in the production of coal in France, of late years, will be seen from the accompanying table.

	Tons Produced.		Tons Produced.
1814.....	665,610	1841.....	3,410,210
1826.....	1,301,045	1847.....	5,061,183
1836.....	2,544,835	1852.....	4,816,355

It will be noticed that the production of the year 1836 was nearly double that of 1826, and that of 1847 nearly double that of 1836. The decrease in the year 1852, as compared with that of the year 1847, is attributed to the Revolution of 1848; and there is every reason to believe that, but for that cause, the production of the year 1852 would have more than doubled in amount the produce of the year 1841.

The great drawback to the extensive production of coal in France, arises from the difficulty of working the coal strata, which

are smaller, and lie deeper under the surface, than those in England and Belgium.

The area of the coal districts in Great Britain is estimated at about 4,250,000 acres; that of the French at 700,000 acres; and that of the Belgian at 450,000 acres. The production of the Belgian coal mines is about the same as that of the French mines, although the area of the mines is considerably less.

The production of coal in Russia is very trifling in amount, which naturally proves a great impediment to the use of machinery, as well as to various manufacturing processes in that country. The annual average production of coal in the Russian Empire is stated to have been, in 1853, only 50,794 tons, and the value of the coal imported 202,464*l.*, so that the manufacture of iron in Russia must have been chiefly carried on by means of charcoal.

The production of coal in Sweden, in 1848, was about 160,000 to 170,000 barrels of 4 bushels each, and the imports 718,025 barrels.

The amount of coal produced in Prussia, in the year 1849, was about 3,600,000 tons, and the imports 353,977 tons.

The total amount of coal produced in Austria, which is also an iron manufacturing country, in each of the years 1847 and 1848, was 842,398 and 885,555 tons, respectively. The importation of coal into the Austrian empire was, in 1847, 43,710 tons, and in 1848, 39,200 tons.

These statements have been introduced here to show the relative production of coal in the principal iron manufacturing countries of the continent.

It is almost needless to remark that the prosperity of the British iron manufactories is owing to the iron and coal being produced in the same localities, which necessarily tends to cheapen the cost of the manufactured article by a saving in the cost of the fuel,—an advantage hardly possessed by any other mining country in Europe.

To return to the *coal mines* of France, we find that the number of coal fields (*bassins carbonifères*) at work in the year 1841, was *sixty-two*, and a similar number also in the year 1852, although the mines at work had increased from 256 in the year 1841, to 286 in 1852.

The production of the sixty-two coal-fields in the year 1852 was:—

Coal, Lignite and Anthracite.	
Quintaux Métriques.	
Bassin de la Loire.....	16,311,300
„ de Valenciennes.....	10,728,500
„ d'Alais	3,851,600
„ de Creusot et Blanzey.....	4,057,300
„ d'Aubin	1,710,300
„ de Commentry	2,209,700
„ d'Epinac.....	1,043,700
„ du Maine	1,010,100
„ d'Aix	1,056,300
Les 53 autres bassins	7,060,459
<hr/>	
Total { Quintaux Métriques	49,039,259
{ Tons	4,816,355
{ Value in £ sterling	1,870,072

It appears from the above table that of the sixty-two coal-fields at work in 1852, only nine produced coal to any extent; while the production of the remaining fifty-three did not exceed, on an average, 133,216 *quintaux métriques* each, or 13,083 tons.

The number of coal *mines*, as stated above, increased from 256 in the year 1841 to 286 in 1852, and the *average production of each mine* also increased from 13,321 *tons* in 1841, to 16,840 *tons* in the year 1852. The average production of *each mine* in the year 1832, was only 9,863 *tons*.

The number of workmen employed in raising the various kinds of coal in France was 29,320 in the year 1841, and 35,381 in 1852. Of these numbers 22,595 were employed in the mines in the year 1841, and 27,001 in the year 1852, the remainder being engaged in various occupations on the surface. A later official return states that the coal industry of France, and the different works connected therewith, afford employment to about 60,000 persons. The average amount of coal raised, by each person employed, was 116 *tons* in the year 1841, and 136 *tons* in 1852, shewing an increase of 20 *tons* to each workman in 1852, as compared with the production of 1841. The *average production of each mine* also increased by 3,519 *tons* in 1852, as compared with 1841.

The English census of 1851 states that 219,015 persons were employed in the coal mines of Great Britain in that year, and assuming that the production of coal in Great Britain is eight times greater than that of France, the *average production* would be about 175 *tons* to each person employed, which would be 39 *tons per head* more than the average for France.

The machinery employed in the French coal mines (steam and horse taken together), amounted to 11,216 horses' power in the year 1847, and 12,880 in 1852. The average official value of the coal produced in France was 7*s.* 9½*d.* per ton. During the years 1848 and 1849, the price of coal advanced, but declined again in 1850 and 1851 and in the year 1852; it fell below that of the year 1847, the year preceding the Revolution.

The next consideration is that of the consumption and importation of coal.

In the year 1841, the amount of coal consumed in France was 4,980,000 *tons*, and in 1852, 7,816,403 *tons*, shewing an increase of 2,836,403 *tons*, consumed in the year 1852, over that of 1841. Of the 7,816,403 *tons* consumed in 1852, 3,033,888 *tons* were of *foreign* production, and 4,782,515 *tons* of French production. In the year 1847, the amount of foreign coal consumed in France was 2,501,901 *tons*, and of French coal 5,010,382 *tons*. It will be observed, therefore, that the use of foreign coal had *increased* by upwards of 21 per cent. since that year (1847), whilst that of French coal had decreased nearly 4½ per cent.

The total *importation* of coal into France in each of the years 1841 and 1852, was

Countries from whence Imported.	1841.	1852.
	Tons.	Tons.
Belgium	992,226	2,081,338
Great Britain	429,950	640,740
Rhenish Provinces	196,502	318,470
Other Countries	482	127
Total	1,619,160	3,040,675

The most striking feature in this table is the large increase in the imports from Belgium in the year 1852, as compared with those in the year 1841,—an increase of 109 per cent. The connection of many of the French towns by means of railroads, together with the lower rates of duty imposed on the importation of Belgian coal, have no doubt been amongst the causes of this large increase in the supply from that country. The imports of coal from Great Britain had also increased, during the same period, by 49 per cent., and those from the Rhenish provinces by 62 per cent. The supply from other countries, which is very inconsiderable, exhibits a falling off in 1852, as compared with 1841.

The duties on the importation of coal into France were reduced in November, 1853, to 6s. 9½*d.* per ton, in foreign vessels, when imported at ports between Dunkirk and Sables d'Olonne; and 5s. 6½*d.* per ton at all other ports; coke to pay one-half above these rates. The import of coal from the United Kingdom, in 1853, was 698,062 tons, or an increase of 57,322 tons over that in 1852.

The export of coal from France is small, amounting in the year 1852 to only 40,621 tons. These exports were chiefly to Algeria, Spain, and Switzerland.

The extraction of peat may be mentioned here, as being in some measure connected with this branch of mining industry. It affords employment to from 50,000 to 55,000 workmen, annually. The value of the peat produced in each of the years 1847 and 1852, was

	£
In 1847.....	205,315
„ 1852.....	173,330

2. *Iron Mines and Manufactures.*

Iron, Raw.

We have now to notice the production and manufacture of iron in France.

The total amount of iron ore raised in France, was 3,401,843 tons in 1847, and 2,043,479 tons in 1852. The following table shows the means which were employed for extracting those quantities in each year.

Years.	Number of Mines and Workings.	Workmen Employed.	Machinery.	Ore Raised.
			Horse Power.	Tons.
1847.....	1,081	15,669	62	3,401,843
1852.....	952	11,601	117	2,043,479

The departments producing the largest quantities of iron, during these years, were those of Haute-Marne, Haute-Saône, Cher, Moselle, and Nord; the total production of these five departments amounting to more than *one-half* the total quantity raised.

The next in order stand the departments of Ardennes, Meuse, Côte-d'Or, Pas-de-Calais, Nièvre, and Aveyron, whose produce, added to that of the five above mentioned, amounted to more than *three-fourths* of the total production. Forty-seven other departments produced iron in smaller quantities, and twenty-eight not at all. It is moreover stated in the Report that there is reason to believe that iron does not even exist within their limits.

With regard to the production of raw iron in those countries which have been selected for comparison with France, we find that the annual average amount of iron ore raised and smelted in *Sweden*, in each year from 1843 to 1847, was about 325,000 tons; and the annual average production of the *Prussian* iron mines, in each year from 1845 to 1849, was about 250,000 tons. The annual average produce of the *Belgian* iron mines, in each year from 1845 to 1849, was 468,000 tons. The average production of iron in Belgium, during the five years 1845 to 1849, more than doubled in amount the average production of the five preceding years. The production of the *Austrian* iron mines, in the year 1851, was 63,000 tons.

Manufacture of Iron.

The manufacture of iron, which is of long standing in France, is the most important branch of its metallurgical industry. The ores of this metal are found in large quantities in the central part of the kingdom; and the soil of this region, which is not very fertile, has for centuries been devoted to the growth of timber for the use of the foundries and smelting works. Of late years, however, *coal* has been employed in the manufacture of this article; and, by a judicious use, it has had the effect of lowering the price of the manufactured iron without deteriorating the quality. Coal is employed in the ultimate processes of the manufacture in the production of wrought iron from the pig. The introduction of *coal* does not appear to have diminished the use of charcoal, but on the contrary to have rather increased it, although not in so large proportion as that of coal.

The dearth of fuel is one of the greatest impediments to the cheap and extensive production of iron in France; but it appears from the proportion of the value of the fuel to that of the iron produced, that a great economy of fuel has been made for some years past. The total value of iron and steel manufactured in the various departments in France, in the year 1841, was 5,671,582*l.*, and in

the year 1852, notwithstanding the great check which the iron trade received in 1848, to 11,893,227*l.*, or more than double the value of 1841. The total value of iron and steel produced in France in the year 1832, was only 3,492,519*l.*; the increase in the year 1852, as compared with that year, is therefore more than 240 per cent.

It may be as well to introduce here a statement of the production of the other iron-making countries of the continent. It will be noticed that in each instance, the manufacture of iron is considerably less than that in France. As the chief object of this paper, however, is to illustrate the progress of French mining industry alone, it has been deemed sufficient to allude to the other countries in general terms.

Russia.—The total average production of *cast* and *wrought* iron in Russia, in each of the 6 years from 1838 to 1844, and from 1844 to 1850, was

	Annual Average.	
	1st Period.	2nd Period.
	Tons.	Tons.
Cast Iron.....	168,445	187,755
Wrought do.	111,311	123,911
Total	279,756	311,666

The production of cast and wrought iron in *France*, in the year 1852, was 1,134,542 tons; and assuming that the Russian production of these two sorts of iron had increased in the usual proportion to about 350,000 tons in 1852, we shall at once arrive at the relative production of these countries, bearing also in mind that the manufacture of iron forms the principal part of the mineral industry of Russia.

Sweden.—Sweden is allowed to rank next to Russia in the production of iron noted for its fine quality, and peculiar adaptation to the manufacture of steel. The most celebrated mines in Sweden are those of *Dannemora*, *Utö*, *Nova*, *Phillipstad*, and *Gellivara*. The average production of *cast* and *wrought* iron in that country, in each year from 1843 to 1847, was

	Tons.
Cast Iron.....	156,907
Wrought do. and Steel	96,731
Total.....	253,638

Prussia.—The production of *cast* and *wrought* iron in Prussia, in the year 1849, was

	Tons.
Cast Iron.....	137,685
Wrought do.	119,959
Total	257,644

In the province of *Silesia*, the manufacture of iron is carried on upon a large scale, in the English system, coal and iron being there found together in great abundance; but, although possessing the same advantages as England in this respect, the coal is less fitted for the manufacture of iron than that of Wales or Staffordshire, which renders the employment of charcoal necessary to a great extent; and it is stated that three-fifths of all the bar-iron is made in charcoal fires. The mining operations in *Silesia* have made great progress of late years.

Belgium.—The manufacture of *cast* and *wrought* iron in Belgium, in the year 1849, amounted to

	Tons.
Cast Iron	158,805
Wrought do.	65,827
Total	224,632

The total manufacture of iron in Belgium in the year 1849, was considerably less than that of the year 1847.

Austria.—Austria produced 22,431 tons of *cast* and 15,320 tons of *wrought iron*, in the year 1851, making a total of 37,751 tons.

The following table gives a comparative view of the production of these several countries. For Great Britain the *estimated* production is for the year 1851.

Countries.	Iron Produced.	
	Pig and Cast.	Wrought.
	Tons.	Tons.
Great Britain	2,400,000	No estimate
France	601,700	532,700
Russia	187,700	123,900
Sweden	156,900	96,700
Prussia.....	137,600	119,900
Belgium	158,805	65,827
Austria.....	22,400	15,300

Although these sums do not exhibit the production of each country in any *one* particular year, they still may be taken as showing a fair relative proportion of the average amount produced by them.

In pursuing our enquiry with regard to France, we find that the different kinds of iron manufactured in France, in the year 1852, were as follows:—

	Quantity.	Value.
	Tons.	£
Iron, Cast, viz.—		
Pig	429,677	2,278,951
Castings, 1st melting	83,633	720,156
„ 2nd „	88,479	1,146,452
Total of Cast Iron	601,789	4,145,559
Iron, Wrought, viz.—		
Large goods.....	296,369	3,650,378
Small „	177,002	2,805,702
Rails	59,382	656,059
Total of Wrought Iron..	532,753	7,112,139
Steel.....	17,774	635,529
Total of Cast and Wrought Iron and Steel	1,152,316	11,893,227

The quantity of pig iron made in the year 1841, was 377,142 tons, and of malleable iron 263,747 tons.

The value of the fuel used in the different processes of casting and manufacturing the iron and steel, in each of the years 1841 and 1852, was

	1841.	1852.
	£	£
Charcoal	1,706,712	1,214,636
Wood	41,027	12,948
Coke	177,237	415,746
Coal.....	254,387	446,935
Total	2,179,363	2,090,265

It will be observed that the cost of the fuel was $38\frac{1}{2}$ per cent. on the value of the metal, in the year 1841, and little more than $18\frac{1}{2}$ per cent. in the year 1852. How far this decrease may be attributed to the fall in the price of fuel in 1852, as compared with 1841, will be seen from the following table.

Average Price of each Kind of Fuel used in the Manufacture of Iron and Steel in France in each of the Years 1841 and 1852.

	1841.	1852.
	£ s. d.	£ s. d.
Wood Charcoal, per ton	2 17 5	2 10 $4\frac{1}{2}$
Wood	0 4 7	per ton 9 $2\frac{1}{4}$
Coke	1 0 2	0 19 0
Coal	0 14 7	0 10 $5\frac{3}{4}$

The production of pig iron with charcoal requires about 150 per cent. of that fuel in the various processes of the manufacture; and when with coke 170 per cent. of the fuel. The official value of the *pig iron* produced in the year 1841, was 6*l.* 11*s.* 1*d.* per ton, and that in the year 1852, 5*l.* 5*s.* 10½*d.* per ton; the values of the other kinds of iron have decreased in about the same ratio.

The recent reductions in the duties on the importation of iron into France, are of considerable importance to British and other foreign manufacturers of this metal. In the year 1841, the import duties on *pig iron* were 3*l.* 2*s.* 6*d.* per ton, on *plates and bars*, according to dimensions, from 8*l.* 7*s.* 4*d.* to 16*l.* 14*s.* 9*d.* per ton. These duties have been reduced to the following rates, which came into operation on the 1st of January of the present year (1855).

Pig iron	per ton		£	s.	d.
			1	15	4
Bars, according to dimensions	"	{ From	4	8	0
			6	3	4
Iron plates	"	To	8	16	0
Steel, in bars, cast or wrought	"		13	4	0

Iron rails pay the same rates as iron bars according to dimensions.

The *imports* of *iron* into France, as already mentioned, are much limited in consequence of these heavy duties. The total quantity of pig iron imported in the year 1841, was 26,452 tons, and in the year 1852, 40,279 tons. In the year 1853, in consequence of the reduction of the duties, which, however, were still higher than those above stated, the imports of pig iron increased to 72,358 tons.

At present, Belgium supplies France with the largest share of this article, although, at one time, she occupied only a secondary position to Great Britain. In the year 1841, Belgium supplied France with little more than half the quantity supplied by Great Britain; but, in 1852 and 1853, she changed her position, and now sends more than double the quantity Great Britain does, a phenomenon which is the more remarkable as France is one of the best customers to the iron manufacturers of this country.

We may in conclusion mention that the quantities of British *iron and steel* exported to France in each of the years 1841 and 1852, were

	Tons.	Value.
		£
1841.....	19,099	95,943
1852.....	22,325	80,839

3. Other Metals.

The production of other kinds of metals than those of iron and coal in France, is exceedingly limited in amount, as will be seen from the table below:—

	1841.	1852.
	£	£
Copper.....	11,147	206,693
Silver	18,340	54,160
Lead	12,559	41,446
Litharge .....	....	8,972
Gold.....	....	2,490
Antimony	6,198	....
Manganese	5,899	....

The results of the year 1852 tend to show that the general mining industry of the country is daily assuming a more active spirit, and that it will, no doubt, continue in its onward progress, if nothing happen to impede its course.

The declared value of the British metals and coal exported to France in each of the years 1841 and 1852, was

	1841.	1852.
	£	£
Iron and Steel.....	95,943	80,839
Hardware and Cutlery	67,779	95,492
Copper and Brass	573,632	435,956
Lead	47,080	39,382
Tin and Wares, and Plates	39,629	27,596
Coals, Cinders, &c.....	155,243	226,613

The importance of a relaxation in the French tariff, both to this country as well as to France herself, is too well understood to require any comment here, though it may be as well to observe that as things at present exist, the *British Coal* and *Iron* interests with regard to the foreign trade of France, have a skilful and enterprising rival in the coal and iron producers of Belgium, who now enjoy the largest share in the foreign supply both of coal and iron required by France.

Juvenile Delinquency.—Its Principal Causes and Proposed Cure, as adopted in the Glasgow Reformatory Schools. By THE REV. A. K. M'CALLUM, M.A., *Governor of the House of Refuge, Glasgow.*

[Read before the Statistical Section of the British Association, at Glasgow, September, 1855.]

IN the outset the writer shewed that crime being one of the social problems of the age, in order to diminish the number of our criminals, we must begin by the reformation of our youthful offenders. He then enumerated in detail, the causes of juvenile delinquency in Glasgow. The principal of these was—

I.—*Depraved Parental Influence.*

He represented the disastrous effects of intemperance upon the family, and shewed that the child is led by the profligate example, and sometimes precept, of his parents to the commission of crime, and is thus brought under the lash of the law. He found out of 286 boys, now in the House of Refuge, 72 who attribute their fall either directly or indirectly to the bad conduct of their parents. He mentioned as another prolific source of crime—

II.—*Corrupting Associates.*

He stated that there are hundreds of adepts in vice throughout the city who make it their business to inveigle young persons, and compel them by threats, or encourage them by rewards, to steal. That these young victims, however, soon set up for themselves, and carry on their depredations on their own account. That the number of youths corrupted in this way annually, is very great, and that all public works, and society in general, are heavy sufferers. That these are chiefly young persons inured to crime by repeated recommittals to our gaols, and that among the boys of the House of Refuge there were 152 who trace their ruin principally to these bad companions.

III.—*Wee Pawns**

Were another source of evil. They are the favourite haunts of the beggar, the thief, the drunkard, and the juvenile delinquent, from the universal nature of the articles they receive. That the young person was confirmed in his nefarious traffic from the facilities afforded by these places for the disposal of his booty. That the whole system of pawnbroking houses should be thoroughly revised, and a severe penalty inflicted on any one who received articles from *YOUNG persons under any pretence whatsoever.* He stated that—

IV.—*Shows and Minor Theatres*

Were, beyond comparison, the most prolific sources of juvenile crime. That these places are whirlpools into which when our youth are once drawn, their destruction is almost inevitable. The writer himself visited some of these places in company with two officers, kindly furnished by the Superintendent of Police. The scene he witnessed will not bear description. From three to four hundred

* “Wee,” Scottish for “little.”

young persons were huddled together in one of them, three-fourths of whom, according to the testimony of an experienced officer, lived by thieving. The scene for the night was a fair representation of what usually occurred, and yet the licentious inuendos introduced, the low profligate character of the songs sung, and the whole moral atmosphere was charged with a pollution which could not but exert the most deadly effect on all that we hold sacred and virtuous. There were 173 boys in the House of Refuge who stated these pests as the principal cause of their being led astray.

As a substitute for these places he suggested the throwing open of Botanic Gardens, Museums, and works of Art and Industry, at the lowest charge to the working classes. The opening of public parks to furnish abundance of pure air and recreation. The encouragement of cricket, bowling, and other athletic games by offering premiums. The furnishing of lectures on scientific, industrial, and other popular subjects. The opening of Schools of Design, and *free* Public Libraries, and the supplying of abundance of sound substantial and cheap education to the very poorest of the people. To encourage education, he suggested that our capitalists, mill owners and other extensive employers, *should take no youth into their works except he be furnished with a certificate of education*, which ought to be a condition of leaving school. This would be a sufficient motive for the most neglectful parents to see their children educated. That the law affecting pawus should be remodelled; that such minor theatres and shows as are found conducive to immorality should be suppressed; that the sale of ardent spirits should be restricted; and that the houses of the working classes should be made more comfortable, by extending the benefits of Dunlop's admirable Act. By the home enjoyments thus secured, the increased intelligence, the taste for elevating and ennobling pursuits, most, if not all, of the debasing habits now prevalent, at once our social bane and disgrace, would speedily disappear.

The writer then proceeded to mention certain

Remedies.

He showed that short imprisonments have totally failed in reforming juvenile delinquents. Some, while in confinement, purpose an amendment of life, and were they then taken by a friendly hand might be rescued. But when, on the day of liberation, they meet with bands of their former associates in crime, can we expect but that these resolutions will be overcome? This is the uniform testimony of those who have the amplest means of knowing, and experience confirms the fact. In Glasgow prison, during last year, according to the report for the prisons of Scotland, the recommittals were 665 once, 363 twice, 247 three times, 190 four times, 135 five times, 191 from six to ten times, 71 from ten to twenty times, and 26 from twenty to fifty times. Edinburgh is no better. In that gaol there were recommitted 1,001 once, 544 twice, 234 three times, 226 four times, 142 five times, 375 from six to ten times, 337 from ten to twenty times, 218 from twenty to fifty times, and 23 upwards of fifty times.

Thus we see that short imprisonments only aggravate the evil they

are designed to cure. The reformatory element, then, must predominate in our treatment of the young. But the remedy must be *commensurate* with the disease. We would have every juvenile delinquent brought before the police court for the *first* time, to be handed over to his parents or guardian, if he has any, who should be charged to keep him from infringing the law. Upon being convicted a *second* time, he should be sent to the Reformatory School, at the expense of his parents, and kept there till his majority, or till such time as the Directors of the House were satisfied that he would conduct himself, if discharged, as a proper member of society. The objection will be raised against this treatment that it interferes with the liberty of the subject, and that the punishment is out of proportion to the crime committed. To this it was answered, first, that there is no *punishment* at all inflicted, the object being solely the child's welfare; secondly, that society has rights and privileges which should ever be held sacred; thirdly, that there is no injury done to the person who has transgressed the rights of society, should that society declare that a certain period must elapse before his full privileges be restored to him; and lastly, to the objection that parents will become indifferent to their children when they know they will be cared for, and that children will be found to commit crime to qualify them for admission. The time proposed to keep them in the Reformatory, and compelling parents to support them, is a sufficient answer. None will seek to qualify themselves under such conditions. Ample experience in the Glasgow Reformatory confirms this.

In a Reformatory Institution there should exist a correspondence, as near as practicable, between the condition of the boys in the House, and what will be their actual condition in life. This will prevent a reaction. There should be no finery, neither in their dress nor food. All should be plain, substantial, and conducive to health. They should be made to learn their trade thoroughly, as this will give them a great superiority over those whom they will meet with when they go out into the world. The principal *remédies* he would suggest, are adopted in the Glasgow Reformatory Schools, a brief history of which was given. The subject of juvenile delinquency was impressed, at an early period, upon many of the public minded and benevolent citizens of Glasgow. In the year 1836, a subscription was set on foot to erect, by voluntary contribution, an institution for the reformation of the dangerous classes. The appeal was met with the usual liberality which distinguishes the merchants of Glasgow. Upwards of 20,000*l.* were collected. A piece of ground about 5 acres, to the east of the city, occupying an elevated position, was purchased, and a handsome erection raised thereon. The House was opened for the reception of inmates on the 17th day of February, 1838, by the Very Rev. Principal McFarlane. In its early stage it met with many difficulties. Its present prosperity is greatly owing to the enlightened and comprehensive measures of the Honourable Board of Commissioners and the indefatigable exertions of the Convener, James Playfair, Esq. The Houses of Refuge were licensed last year, under the Youthful Offenders Act, 17th and 18th Vict., cap. 86, as Reformatory Schools. In the boys' house, three objects are sought to be accomplished for every inmate admitted. To send

him out with a good education, a good trade, and a good character. The institution aims at educating the *whole* boy, physically, morally, intellectually, and socially.

1.—*Education.*

In the School, reading, writing, arithmetic, grammar, geography, music, scientific and scriptural knowledge, are taught. The time is divided into two divisions, fore and afternoon, with four classes in each. While the one division is taught at school the other attends their trade. Thus weariness and listlessness are unknown in either, and as much progress made in both, as if only one were carried on at a time. The boys are found very ignorant when admitted. Out of 286 boys, 79, upon admission, could read tolerably well, 110 could read little words, and 97 did not know the alphabet.

II.—*Industry*

Obtains a prominent place in the house. Idleness is the bane of our juvenile population, and almost invariably leads to crime. It is, therefore, found a vitally important element to train the boys as much as possible to the usual trades carried on in society—in short, to make the house a little world of its own. At present, farming, tailoring, shoemaking, weaving, joining, and wood splitting, are the principal occupations conducted in the house. More are in contemplation. The gross return from work executed during the past year, was 3,300*l.* 1*s.* 1*d.*, and the net proceeds, after paying from this sum the material for the work, the salaries of the superintendents of the trades, and journeymen employed to instruct the boys, was 614*l.* 2*s.* 3*d.*

III.—*Moral Training.*

The house, with its present number 286 (which from additions and alterations now in progress will soon accommodate 450), is one large christian family, with the Governor and his wife acting in the room of parents. The law of love pervades the youthful community. A moral tone, through Bible and kindly training, influences the whole. Force and restraint are unknown. A newly admitted boy, after preliminary training separately under the immediate care of the Governor, is by degrees permitted to associate with the rest, and obtain his full privileges. Those thus admitted are absorbed into the habits and feelings of the rest, and soon moulded by them. The sympathy of numbers is found most beneficial. At the close of each day, three marks, one for obedience, one for truthfulness, and one for industry, are given to each boy, by his master, according as he has behaved. Thus he daily writes out the certificate which is to determine the length of time he is to be detained in the house. Confidence is placed in the boys. In the summer they enjoy excursions down the Clyde, to the Botanic Gardens, &c., and in no instance has this privilege been abused. Of 229 boys dismissed during the last five years, after the most rigid examination we can discover but *nine* cases who have fallen into the hands of justice. From 80 to 90 per cent. are doing well. The following are some of their occupations, viz.:—30 sailors, 6 soldiers, 19 tailors, 16 shoe-

makers, 14 farmers, 2 mechanics, 3 iron founders and moulders, 4 wrights, 5 message boys, 3 shop boys, 3 brass founders, 1 baker, 1 carver and gilder, 4 office boys, 3 carters, 1 shopkeeper, 1 clerk.

Conclusions.

1. That our great cities are the centres of crime; and that many incitements to juvenile delinquency, there existing, might, through judicious interference on the part of our magistrates, be greatly modified.

2. That gaol punishments, instead of reforming, invariably demoralize juvenile delinquents.

3. That to benefit youthful delinquents, and successfully induce parents to contribute to their support, they should be sent to Reformatories till their majority, giving power to the directors of such places to send them out sooner, on being satisfied that they would do well.

4. That the law of love and kindness combined with intellectual and moral training, never fails in reclaiming youthful offenders, and making them useful members of society.

5. That the experience of many years in the Glasgow Reformatory Schools, proves the reformability of from 80 to 90 per cent. of juvenile delinquents.

6. That, in an economical point of view, prevention is better than cure; the gross cost of a boy in the Glasgow Reformatory being 13*l.* per annum, and, deducting his earnings, about 10*l.*

TABLE I.

Showing the Number of Boys Admitted and Disposed of from 1st July, 1854, till 1st July, 1855.

Boys in house 1st July, 1854 .....	....	232
" admitted from 1st July, 1854, till 1st July, 1855 .....	....	87
" disposed of .....	....	69
Of these were sent to Canada and the United States	10	....
" " the Navy	7	....
Boys for whom situations have been procured.....	41	....
" who left the house irregularly	9	....
" who died in the house	2	....
" who returned of their own accord .....	....	5
Average number of boys in house during the year .....	....	237
Boys in house 1st July, 1855 .....	....	250

TABLE II.

Showing Average Age of Boys when began to Steal, Age when Admitted into the House, and Age at present (1st July, 1855.)

Years...	Age of Boys.																		
	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	Total.			
Number when admitted into house	3	5	6	15	36	26	56	57	44	22	11	2	3	...	...	286			
Number with present age in house .....	...	...	1	2	8	10	28	30	64	63	40	20	9	3	2	...			

Average age when began to steal.—From 9 to 12 years.

TABLE III.

Showing the Period of Time the Inmates have been in the Institution.

	One Year and less.	Two Years.	Three Years.	Four Years.	Five Years.	Six Years.	Seven Years.	Total.
Number of boys	143	41	44	23	18	15	2	286

TABLE IV.

Showing the Character of Parents, and whether Dead or Alive, of 286 Boys now in the Institution.

Number of boys one or both of whose parents are (or were) when alive) drunkards .....	....	124
Number of boys whose father or mother deserted, or un- known to them.....	48	....
Number of boys whose parents are both dead	61	....
" " father is dead	79	....
" " mother is dead.....	42	....
" " parents are both alive	56	....
		286

TABLE V.

Showing the Principal Incitements to Crime, and the Nature of the Offences for which they were Convicted.

Number of boys who stated the shows and minor theatres as the principal cause of their being led astray	173
Number of boys who were encouraged to dispose of stolen articles in little pawnshops, rag and marine stores	147
Number of boys who trace their ruin to bad companions, especially young persons who have been in prison	152
Number of boys who assigned their parents' misconduct and hunger as the cause, &c.	72

TABLE VI.

Showing the State of Education when Admitted (into the House and their present state,) of 286 Boys now in the Institution.

<i>On Admission.</i>		
Boys who did not know the alphabet	97	286
" could only read little words	110	
" could read tolerably well	79	
" could read, write, and count a little	48	
<i>Present State.</i>		
Boys who can read but little words	59	286
" " tolerably	86	
" " well	141	
" are writing	227	
" at grammar and geography	134	
" arithmetic	185	

TABLE VII.

Showing the Character of 229 Boys Discharged from the House during the last Five Years, viz., from 1st July, 1850, to 1st July, 1855.

Number whose history could not be traced.....	13
„ who died since leaving the house	10
„ „ relapsed into crime, and convicted.....	9
„ „ have not been convicted, but are not very steady	14
„ „ are doing well	183
Total	229
Giving 80 per cent. of those known to be doing well, irrespective of those whose addresses are unknown.	

TABLE VIII.

Showing the Number of Boys Admitted and Discharged from 1st July, 1850, till 1st July, 1855.

Admitted.		Discharged.	
1850-1	71 boys	1850-1	34 boys
1851-2	64 „	1851-2	47 „
1852-3	46 „	1852-3	45 „
1853-4	49 „	1853-4	34 „
1854-5	85 „	1854-5	69 „
315		Total.....	229 „
Annual average of admissions 63 boys.		Annual average of discharges $45\frac{4}{5}$ boys.	

TABLE IX.

Showing the Countries to which the Boys at present in the Institution belong.

Born in Scotland	222
Of these there were born in Glasgow	160
Born in England	7
„ Ireland	56
„ other countries (America)	1
Total.....	286

TABLE X.

Showing the Trades conducted in the House, and the Average Number of Boys employed at them.

Tailoring	62
Shoemaking	54
Weaving	16
Farming.....	25
Wood-splitting	88
Joining	5
Various occupations	33
Monitors assisting teacher	3
Total	286

TABLE XI.

*Showing Return from Boys' Labour and Expenditure for One Year, from
1st July, 1854, till 1st July, 1855.*

	Gross.			Net Amount.		
	£	s.	d.	£	s.	d.
Gross amount of work done	3,300	1	1	.....	
Net proceeds, after paying for the material and wages of tradesmen .....	.....			614	2	3
Gross expenditure	2,905	13	1	.....	
Net do. after deducting profit on work, which sum is paid from share of assessment for boys' house and board for Sundries .....	.....			2,291	10	10
Gross cost of each boy per annum	13	0	0	.....	
Net do. after deducting his share of earnings .....	.....			*10	0	0
The above includes all expense but house-rent.						
*Previous to the rise of provisions the net cost was....	.....			7	10	0

TABLE XII.

*Showing the Number of Officers and Tradesmen Employed in the House of
Refuge for Boys.*

Governor	1
Teacher of school and assistants	4
Clerk and storekeeper	1
House officers	2
Superintendent of tailoring and tradesmen	7
" shoemaking and do.	6
" weaving and assistant	2
" farming	2
" joining	1
Gate and doorkeepers	2
Female servants	5
Total	33

INDUSTRIAL SCHOOLS.

TABLE XIII.

*Showing the Number of Boys and Girls Admitted and Disposed of from
31st December, 1853, till 31st December, 1854.*

	Boys.	Girls.	Total.
In school on 31st December, 1853	155	85	240
Admitted during 1854	101	56	157
Deserted, but re-admitted	18	....	18
Left during the year	161	75	236
Remaining on 31st December, 1854	113	66	179
Employment was found for	49	27	76
Removed by parishes, and sent home to relations, &c.	23	46	69
Deserted	85	1	86
Died	4	1	5

Statistics of a Glasgow Grammar School Class of 115 Boys.

By ANDREW TENNENT, ESQ., *one of their number.*

[Read before the Statistical Section of the British Association at Glasgow, September, 1855.]

ABOUT sixty years ago, a class was formed in the Grammar School of Glasgow, consisting of 115 boys, whose average age would be 8 to 9 years, chiefly sons of the Glasgow merchants, manufacturers, and shop-keepers. There were also among them, some of the sons of the professors of the college, and of the clergy of the city, both established and dissenting. A son of the then Lord Provost was also of the number, as well as several of the sons of the then magistrates, besides a few sons of operative weavers, masons, and others. These things are mentioned to shew that the class was a fair representation of the respectable and industrious classes of the community, at that time; and when assembled, must have formed a very interesting group, just entering on a new course of existence. And often must the thought have occurred to the mind of their seniors, what will be the future history of these youths, after fifty or threescore years have gone over their heads? It is rather a solemn enquiry, and still more solemn the reply:—of these 115 boys, who entered school together, 60 years ago, 76 are known to be dead; the fate of 13 is uncertain; and 26 are still alive; 24 appear to have died before attaining 30 years of age; 21 between the ages of 30 and 40; 13 between 40 and 50; 5 between 50 and 60; 6 between 60 and 63; 7 between 63 and 68; in all 76 ascertained to be dead; and as the presumption is that the 13 uncertain are also dead, the total deaths, up to this date, will be 89.

The after professions of the 115 boys, appear to have been as follows:—

53 Merchants and manufacturers	2 Weavers
7 Lawyers	1 Exciseman
1 Editor	1 Private soldier
4 Clerks	1 Warper
3 Military officers	1 Surgeon
3 Clergymen	1 Carter
3 Sailors	1 Bank porter
2 Private gentlemen	27 { Uncertain, most of whom died
2 Bankers	{ young
1 Professor	
1 Artist	115

Of the 53 engaged in trade, no less than 35 are known to have been insolvent, though many of them have since become prosperous; and some of them are now among the rich men of the city. Of the 53, fifteen are still alive, 9 in Glasgow and 6 abroad; of the 7 lawyers only 2 remain, both in Glasgow; the editor is long since dead; of the 4 clerks all are gone but one; of the 3 military officers one remains a retired lieutenant-colonel of a cavalry regiment; of the 3 clergymen one died many years ago, he was of the Secession body, 2 are still alive, both of the established church, one of whom

was, some years ago, Moderator of the General Assembly; the 3 sailors, and the 2 private gentlemen, all died young; but the 2 bankers are still alive, in active employment, and so is the professor, occupying a chair in one of the oldest universities in Scotland; the artist, with one of the weavers, the exciseman, private soldier, warper, surgeon, and carter, are all away; but the bank porter is still alive, retired from office, and living in single blessedness on his well-earned savings; making 26, in all, still alive. Of these 21 never permanently left their native country, and 16 never permanently left their native city. Of the 60 boys who got prizes for regular attendance 20 are still alive.

None of the class have risen to what may be called distinction; many of them have been, and some still are, respectable and useful members of society; neither have any of them made themselves notorious for crime, with the exception of some half-dozen noted tipplers, all of whom are dead; none appear to have ever enjoyed civic honour, though mostly natives of the city. Some of them, however, took a loftier aim, and aspired to be members of parliament, but without success. The duxes of the class made no great appearance in after life; he who was generally dolt or booby, is now the lieutenant-colonel referred to.

From the records of the dinner bills, at the annual class meetings, it appears that, from 1802, the date of the first meeting, to 1816, the prevailing beverage was wine and cold punch, especially the latter; from 1816 down to the present date, wine and whisky toddy, and little or no punch, appear to have been the prevailing taste.

The boys who were allowed to follow out their natural bias in the selection of future professions, have been, apparently, the most successful. He who is now lieutenant-colonel of a cavalry regiment was, in boyish days, a bold and dashing horseman, and always foremost in stone fights with other schoolboys, found in the army a congenial element, and has risen to his present rank. The same may be said of the clergymen; they too, judging from their early propensities, got into their proper element, and have been, and still are, highly respectable and useful. The youths who succeeded to the business and professions of their fathers, appear to have had the smoothest passage through life. It is rather remarkable that 12 of the 26 alive are still bachelors. But, however faulty these 12 may have been, the other members of the class, as part of the general community, appear to have made ample amends; for, from 1805, when the first member of the class got married, to the present date, the population of Glasgow has increased from about 100,000 to nearly 400,000. The change in the mode of living too, is not less remarkable. The houses of most of our parents were in a close, and up a common stair in the old or eastern part of the town, now almost deserted by their descendants for stately mansions in the west, or cheerful villas in the suburbs.

During the same period, steam navigation and railways have been called into existence; trade and commerce, both foreign and domestic, as well as agriculture, have made prodigious progress, and immense mineral stores have been laid open. Education also has been greatly extended and improved; and there has been a decided advance in

moral and intellectual acquirements. These things are stated, as the 115 boys whose history we are now narrating, had, when at man's estate, their full share in all this activity and progress,—a progress the more remarkable and creditable to those engaged in it, when the agitated times in which they lived, and the difficulties they had to contend with, are considered. A few may be alluded to. The first French revolution broke out as we came into existence; since which time every European kingdom has been shaken to its foundation; the throne of France, the central kingdom, has been six times overturned; most of the other European powers have been twice subverted. Every capital on the continent, from Moscow to Lisbon, has been occupied by foreign troops. Britain, no doubt, has escaped foreign invasion; but there too, great changes have taken place, which produced convulsions of no ordinary magnitude. Among others, wars and rumours of war for the first 30 years of our lives, increasing the national debt to upwards of 800 millions—the slave trade and slavery were abolished—the gold currency restored, ruining at the time nearly one half of the then mercantile community—a sort of church and state revolution occurred by the passing of the Catholic Emancipation and Reform Bills—the East India and China monopolies were removed—the protective system set aside—and free trade introduced, with the repeal of the corn and navigation laws. In addition to all these there have been frequent visitations of famine and pestilence, with commercial convulsions every six or seven years, spreading stagnation and ruin around to such an extent, that the Bank of England has been repeatedly in jeopardy, and other banks swept from the face of the earth in scores: in one week, in 1825, nine London banking houses failed; but, notwithstanding all this confusion and overthrow, the community prospered and grew, signally illustrating the fact that the greatness of a country depends chiefly on the character and stamina of its people, of which of course the 115 boys were, during these times, a part, and had their full share in all the turmoil, for good or for evil, of the last half century.

The scene, however, so far as regards them, is now drawing to a close. Of the 115 who began the world together and fought the battles of life, 26 alone remain, now no longer boys, but aged men approaching the ordinary limits of human life—threescore years and ten; and in conclusion, it may be remarked, that the history of these 115 boys is, probably, the average history of every other 115 boys similarly circumstanced, and may be useful in moderating all mere worldly aspirations.

On our National Strength; tested by the Numbers, the Ages, and the Industrial Qualifications of the People. By JOHN YEATS, Esq., F.R.G.S.

[Read before the Statistical Section of the British Association at Glasgow, September, 1855.]

GREAT Britain has a relative as well as an absolute existence. It may be regarded as one of the industrial communities of the world, as the heart of the British empire, or as the home of the Anglo-Saxon people; in each of these points of view, however, it is becoming, territorially considered, of less and less importance. Taking the area of the United Kingdom as unity, and comparing it with the areas of other countries, we find that, roughly estimated, France and Spain are each half as large again; Turkey, in Europe, the same; in Asia she is more than four times the size; Austria and the German states are each twice as large; Norway and Sweden, together, are nearly two and a half times as large; Russia is seventeen times as large in Europe alone, and forty-five times as large in Asia. As respects the British dominions; Great Britain and Ireland are inferior in area to the Cape Colony and Natal; Canada is computed to be more than double the size; the states under our protection in India are three and a half times as large; British India is more than six and a half times as large; the Australian colonies and Van Diemen's Land are more than eleven times as large; the Hudson's Bay Territory is twenty-six times the size.

Our littoral frontiers cannot be extended unless the waves of the Atlantic subside; but the colonists, who have left our shores, are spreading in every direction, and anglicising so much of the globe, that we may safely assert the English language is spoken, and English habits and feelings are implanted, over a tract of the earth's surface fifty times as great as this our island home. The soil and other resources of surrounding states are improving nearly as fast as those of Great Britain; while the superiority we once enjoyed in the possession of raw material has been sensibly impaired by the increased facilities afforded by steam navigation for intercourse between the most distant parts. In the struggle now arising among nations, it is not capital of any kind, but productive power in the people, which will give supremacy. To that alone we can look for security. Our position in the world will not be maintained unless we put forth all the national strength, which lies chiefly in the Numbers, the Youthfulness, and the Industrial Qualities of the people.

With a single exception, England is the most densely peopled country in Europe. On good authority we have—

	Sq. Miles.	Population.	
England, Area	50,153	16,921,880 = 337 persons to 1 sq. mile.	
Wales, do.	8,167	1,005,721 = 123 " "	
Islands in British Seas	394	143,126 = 363 " "	
Scotland, do.	31,324	2,888,742 = 92 " "	
Ireland, do.	32,512	6,515,794 = 200 " "	

Without going minutely into detail with other countries, we

learn that Belgium has 382 inhabitants to the square mile ; Saxony 328 ; Holland 242 ; Italy 208 ; Germany and Prussia 188 ; France 171 ; Austria 145 ; all Europe 82 ; Spain 81 ; Turkey 71 ; Russia 27 ; Norway and Sweden 16.

In absolute numbers, the population of Great Britain and the islands in the British seas, was on the 31st March, 1851, 21,121,967 ; and of the united kingdoms 27,637,761. As to the rate of growth, it has been calculated that the population of the same countries was, in—

1651	6,378,000	
1751	7,392,000 =	1,014,000 increase in the century
1851	21,183,000 =	13,793,000 " "

The increased production and distribution of wealth were in proportion to the increased numbers of the people, each century. The disparity in the ratio of increase, for the two centuries, is accounted for by discoveries in the art of medicine during the latter ; by improvement in the manners of the people ; by a more general and more practical recognition, than had previously existed, of the laws on which the well-being of mankind depends. There may be slight mistakes in the calculation, or, what is more probable, a deficiency in the data upon which it rests ; but it is, nevertheless, almost certain that, within one hundred years, two new nations, each equal in numbers, in wealth, and all the elements of prosperity to the third, were called into being, and located on the superficial area that originally contained but one of them. This is valid evidence of our capacity for growth, when the right means are applied. The United States of America have accomplished even more than this. Within fifty years, their population has increased from 5,300,000 to 23,100,000, or more than fourfold.

The course of events, during the last fifty years, is well worthy of attention. The numbers of the people were, in—

1801	10,917,433	1831	16,564,138
1811	12,424,122	1841	18,813,786
1821	14,402,643	1851	21,121,967

Thus, within the half century there has been an addition of ten millions of people, which nearly equals the produce of the preceding eighteen centuries. The increase of two millions three hundred thousand, during the last ten years, is also remarkable as a proof of prosperity ; but another view of it has to be taken.

The increase of persons, during the last ten years, was—

1,924,629 in England
94,343 Wales
270,023 Scotland
19,186 Islands in the British Seas

2,308,181 Increase in Great Britain
1,463,590 Deduct Decrease in Ireland

844,591 Increase in United Kingdom

or 3 per cent. only, making it smaller than that of some of the old states of Europe. Less satisfactory than this even, is the fact, that

while between 1831 and 1841 there was no county in England which exhibited a decrease in numbers; between 1841 and 1851, 27 counties in England and Wales showed sensible diminution, which extended itself more or less over the greater part of Ireland, the north of Scotland, the north of Wales, and the west of England.

As to the increase of wealth during the past half century, we observe in the report that:—"At 3 per cent per annum, compound interest, the value of capital is doubled in 24 years; and a population increasing at 3 per cent, which is near the natural rate, doubles in the same time; while actually the British population has increased at the rate of 1.329 per cent annually, for the fifty years 1801-1851, and has doubled in 53 years. Thus, if we take this indication, *the means of subsistence have increased faster than the numbers of the people*; for while the population has doubled, the value of capital, under investment at 3 per cent. compound interest, has quadrupled. While 100 people in Great Britain became 200 in 53 years, 100*l.* invested and allowed to accumulate, at 3 per cent. interest, became 479*l.* The produce of Great Britain, which in the present state of commerce is always convertible into the means of subsistence, has probably not increased at a lower ratio."

The value of real property assessed to the property and income tax, for Great Britain, was, in 1851, 105,524,491*l.*, viz.—94,809,106*l.* for England and Wales, and 10,715,385*l.* for Scotland. In 1814-15, the value of that property was 60,138,323*l.*, of which 53,495,368*l.* were for England and Wales, and 6,642,995*l.* for Scotland. Personal property, there is every reason to believe, increased much faster.*

* "The wealth of England has been estimated, but it must only be taken as an approximation to the true amount. The value of the cultivated soil, that is, the labour and wealth that is in the soil, is estimated at 1,700,000,000*l.*; mines, at 120,000,000*l.*; roads, canals, and other means of communication, at 500,000,000*l.*; dwellings, factories, and kindred erections, at 550,000,000*l.*; annual agricultural produce in land, the surplus of former years, and agricultural implements, at 230,000,000*l.*; horses, cattle, sheep, and other live stock, at 242,000,000*l.*; manufactured goods, new and in use, at 200,000,000*l.*; mercantile shipping, at 40,000,000*l.*; foreign merchandize paid for, at 50,000,000*l.*; fisheries, foreign, and domestic, at 5,000,000*l.*; being a total of nearly 3,700,000,000*l.* Now this is a sum of which few persons understand the extent. But suppose it was before us in sovereigns, and that we could count twenty in a minute for twelve hours in the day, it would take about 800 years to get through them. This immense sum, however, does not include the coin which is in circulation in the British isles. The gold and silver is nearly 40,000,000*l.*, besides copper, bank notes, bills, and other mediums of circulation. The gold, also, which is in the coffers of the Bank of England is not included. The amount of this fluctuates, but it is seldom less than 15,000,000*l.* Now this 40,000,000*l.* of gold and silver, which is in actual circulation, and the 15,000,000*l.* in the Bank of England, and other sums similarly situated, will amount to nearly 60,000,000*l.* more. Here, then, we have a realized capital of 3,760,000,000*l.* of productive property in the British isles. This amazing sum is all at work in the three kingdoms, and forms our capital in trade. But besides this, we have an enormous sum in what may be called unproductive property. This may be enumerated as follows:—Waste land, public buildings, churches, chapels, hospitals, prisons, arsenals, forts, military stores, dock-yards, ships of war, &c. All this is estimated as being equal to the national debt, about 750 millions. It may, therefore, be said that, notwithstanding our enormous debt, which we must remember is not owing to foreigners, but to Englishmen, we have the entire of our productive capital of three billions seven hundred and sixty millions clear, independently of what other nations owe to us. Now this large sum, which represents everything that is useful and agreeable, and which affords sub-

But having seen this twofold progress in numbers, and in corresponding wealth, we must remember that the aggregate prosperity of the people does not apply to every individual, nor indeed to some very large classes. The whole of a people is, perhaps, never progressive. Amongst contemporaries, fellow countrymen and fellow citizens, the various stages in the growth of society are constantly visible. Independent of the distinctions of race, the Celt on the hill-top herding cattle, the Anglo-Saxon farming in the plains, and the Scandinavian mariner fishing or cruising along the coasts, past ages are ever reappearing in the present.

And there is not a greater difference between one generation and another, than there is between one man and another. Beside the manufacturer and the merchant prince, we have, in 1855, poverty-stricken and unenlightened thousands; not only a large proportion of adults unable to read or write, but very nearly 50 per cent. of the rising generation left wholly uninstructed. Of 4,694,583 children of the ages 5-15, only 2,405,442, or little more than half the number are returned by the parents and heads of families, as scholars at home or at schools. This is dangerous, and a sad deterioration of the national strength.

We have next to observe the peculiarities of local density, and the increase or decrease of particular classes.

The extremes of density are 18 persons to a square mile in the district of Bellingham, Northumberland, and 185,751 within the same compass in the registration district of East London. In the London division, the mean proximity of individuals is now 14 yards; in the North Western division 67; in the West Midland 100; in Yorkshire 107; South Eastern division 118; South Midland division 120; South Western division 124; Eastern division 127; North Midland division 128; Northern division 142; Welsh division 157. In Scotland there are 6·9 acres to a person. In Ireland 3·1. In 1801, the people of England were on the average 153 yards asunder; in 1851 they are 108. On this head a recent writer (Mr. Mann) says:—"If the existing state of affairs were to continue without interruption or change, until the year 2,534, the inhabitants of Great Britain and Ireland, instead of each having a space of 108 square yards to himself, would all touch each other by their elbows. There would be just standing room for all, but no one must think of moving. Britannia with its twelve degrees of longitude, and nearly eleven degrees of latitude, would then look, from the ocean, like a huge rock covered by its impenetrable crowd of penguins or boobies."

In connection with the growth and distribution of the people, it is curious to observe that there are now very few more living in the rural districts, than there were in 1801. Much of the work that

sistence and comfort to twenty-eight millions of people, is the result of labour. In other words, it is the difference between a desolate country, such as this once was, and its present condition. What mine, therefore, was ever so rich in gold, as the mine of industry. England has maintained all her inhabitants, supported all her wars, repaired all her disasters, and, after all, has a clear property of 3,760,000,000*l.* in hand, or 134*l.* sterling per head for every man, woman, and child, in the three kingdoms, besides her foreign property. It is also supposed that Great Britain and Ireland are saving, upon an average, about 60,000,000*l.* every year."—R. EDLESTON,

was formerly done in the country, is at present done in towns. Agricultural implements are manufactured there, artificial manures made or imported, seeds sold, and a market found for produce of every kind. The towns absorb the surplus population of the country, and readily furnish employment to immigrants. On an average there are in the former 5·2 persons to an acre; in the latter 5·3 acres to a person. In the one 3,337 persons to a square mile; in the other 120 only. A glance at Mr. Petermann's Census Map will show that the increase in the population throughout Scotland, England and Wales, has been principally in the maritime and the mining, not in the agricultural districts. The hives of industry cluster thickly around the firths of the Clyde and the Forth, the plains and the coal-fields between the Cheviot Hills and the Grampians. The banks of the Mersey are thronged, the mouths of the Severn, the Thames, and the Tyne; but the central plain, the Wolds and the Downs, are thinly inhabited. Herefordshire, Shropshire, and Wiltshire, present a striking contrast to Lancashire, Yorkshire, and Staffordshire. The tendency of the population is evidently towards urban pursuits. On this head a very able writer says:—"In the rapid growth of towns in the United States, as in England, accompanying the cultivation of the soil, and encouraging, while they supply an ample reward for the labour of the agriculturist, we see the proof of the necessity of towns, even to the extension of agriculture. The mere cultivation of the soil, which bestows plenteous rewards on comparatively little labour, could not give employment to an increasing population. In the towns of England centre all the literature, all the art, and all the science of modern civilization, which make England pre-eminent amongst nations. They are the most progressive, if not the most important, part of the nation. Their inhabitants becoming daily more numerous, and more influential in the whole society, will most materially shape the future fate of Great Britain. This is not the adventitious result of any peculiar policy; it is natural and necessary. For help and protection, man clings to man, and skill and power are much more social than individual. Naturally and essentially gregarious, he is destined to congregate in masses; and the more population increases, the more numerous, and the larger, towns will become."

Our large towns, however, have frequently been the seat of privation and suffering, some of it self-inflicted, among both the possessors and the administrators of capital. The recurrence of such calamities is, if possible, to be averted. As division of labour is indispensable to success, and as dissatisfaction and disorder, arising from too partial views of things, seem inevitably to grow out of it, some more special preparation than any heretofore made, appears necessary to all who engage in business. What is wanted, is a better acquaintance with the principles of social economy, or the laws regulating the phenomena of industrial life.

But we have to do more than consider the numbers of the people and their aggregate means of support; we have also to consider the changes which a man undergoes in the course of his existence. Infancy and age, with all the ills that flesh is heir to, detract from the usefulness of life, and add to its burdens. If feebleness in

individuals, or in families, is fatal to their advancement; dwindling strength, and premature mortality, are no less so to the prosperity of a people. The proportion between the numbers of those who are incapable of exertion, and those who are in the prime of life, must be just and natural. The productive period of existence is short; unless it be prolonged to the utmost, as well as divested of every unnecessary incumbrance, little opportunity is afforded for making provision for declining years.

Great Britain contained, in 1851,

Under 1 year of age	578,543	Between 40 and 60 years of age	3,526,342
„ 15 years „	7,458,080	„ 60 and 80 „	1,414,798
„ 20 „ „	9,558,114	„ 80 and 100 „	129,483
Between 20 and 40 years of age	6,555,954	Above 100 „	319

The males at the soldier's age, 20-40, were, in 1851, 3,193,496. The number of the population at the age of 20 and upwards, exceeds the number under the age of 20, by 2,068,782. Taking into consideration the number of persons in the middle age of life, and of the ineffectives on account of age, and contrasting them with preceding periods, we find that *the strength of the nation has increased faster than its numbers*. Yet, from the foregoing table, it will be seen, that the population returns of our day, unlike those of ancient times, do not refer to the number of fighting men we could muster. Not more than one third of the inhabitants of Great Britain can fairly be considered self-supporting; and from the industry and frugality of these, directly or indirectly, the remaining two thirds principally derive their subsistence.

The commissioners state in their report, that there can be now no doubt that some of the twenty-one millions of people in Great Britain have lived a century, *which may, therefore, be considered the circuit of time in which human life goes through all the phases of its evolution*.

The probable lifetime of a male at birth, is nearly 45 years. The *mean* lifetime, or the average number of years that males live, after birth, in England, is rather more than 40 years (40·36 years), so that if the natural lifetime is conceived to be graduated and subdivided into 100 degrees (years), only 40 of these degrees of lifetime are traversed, on an average, by the children of the healthiest nation of any magnitude in the world! Hence the majority of us live only about two-fifths of the years others attain to, or, may we not rightly say, two-fifths of our appointed time? What would be thought, if our pocket watches could be got to work only two-fifths of the twenty-four hours? Were the full period of existence to be survived by all, that prolongation alone would be tantamount to more than doubling the present population.

The average duration of life is 45 years in Surrey, but 25 only in Manchester and Liverpool. Monstrous anomaly, that one individual in the former place should be equal nearly to two in either of the latter! The commissioners remark:—"As it has pleased the Author of the universe to make the food of mankind chiefly the product of labour, their clothing of skill, their intellectual enjoyments of education, their purest emotions of art, so health and the natural

lifetime of the race are in a certain sense to be, evidently, the creation of the intellect and the will." It is a pity that these principles are not more widely published; they can hardly be recognized and acted upon, unless universally taught.

It appears too that the population is now younger than it would be by the natural standard; younger, probably, in England and Scotland, than in any country in Europe. A larger proportion of the helpless may thus be thrown upon those who are in the prime of life; but a preponderance will be given, ultimately, to the youthful element in society, and consequently scope for the development of greater energy and enterprise. Such a state of things is favourable to progress. From the returns of the census of 1841, for the United States, we find there a predominance of the youthful element, to which some writers have ascribed the recklessness of the American people; others, probably, with more justice, their rapid development. There is no necessary connexion between age and wisdom: the young may want experience, but they need not be devoid of discretion, nor destitute of the light of knowledge. Our transatlantic brethren have determined to turn life to account as early as possible, and to give it the utmost attainable value: hence public provision is made that every free citizen may receive, nearly gratuitously, the highest kind of instruction the times can afford. Would that the example were followed in this country!

One great value of the Census of 1851 is, that from it may be deduced a new classification of society, the Industrial. Disregarding the adventitious and often absurd distinctions customary in historic records, the commissioners have grouped the population, naturally, into sixteen classes, which are subdivided into three hundred and thirty-two occupations, thus forming, as far as possible, a tabular view of the people as workmen and workwomen. I regret that time allows me barely to touch upon this part of the subject.

Some idea of the industrial qualifications of the people may be formed from the list given at p. 374.

Capitalists and the administrators of capital expect a fair return for their investments; they keep no superfluous hands, and cannot afford to encourage incompetency, yet they compete for the possession of the most productive labourers. A man who is in regular employ, and in receipt of the highest rate of wages for a responsible part in the preparation of a useful commodity, might justly look upon the distinction as one equal to any that colleges can confer upon him. Merely muscular labour cannot procure it: mental labour has taken the precedence. "The former is everywhere sinking, while the latter is rising in value. Industrial competition has resolved itself into a competition of intellect rather than of the cost of unskilled labour or the accidental indigenous possession of raw material." This being the case, every one will hope to find in the industrial occupations of the people of his native country, a preponderance of the intellectual element, and ample provision made, public and private, for securing its perpetuity. But my own conviction, after careful study, is, that by far the largest proportion of labour must be regarded as unskilled, and, consequently, least productive; and I cannot but deplore the immense amount of energy and capacity for culture thus lost to the

*Occupations in Great Britain, and Number of Persons engaged in them
(arranged in the order of the Numbers), in 1851.*

Occupations.	Persons.	Occupations.	Persons.
Agricultural labourer	1,460,896	Nail manufacture	28,533
Farm servant, shepherd		Iron-miner	28,088
Domestic servant		Printer	26,024
Cotton, calico manufacture, print- ing and dyeing	501,465	Nurse (not domestic servant)	25,518
Labourer (branch undefined)		Shipwright, ship-builder	25,201
Farmer, grazier		Stone quarrier	23,189
Boot and shoe-maker	376,551	Lodging-house keeper	23,089
Milliner, dress-maker	306,767	Lead-miner	22,532
Coal-miner	274,451	Copper-miner	22,386
Carpenter, joiner	267,791	Straw hat and bonnet-maker	21,902
Army and Navy	219,015	Cooper	20,245
Tailor	182,696	Watch and clock-maker	19,159
Washerwoman, mangler, laun- dry-keeper	*178,773	Brewer	18,620
Woollen cloth manufacture	152,672	Dock labourer, dock and harbour service	18,462
Silk manufacture	146,091	Clergyman of Established Church	18,587
Blacksmith		Protestant dissenting minister	9,644
Worsted manufacture		Police	18,348
Mason, pavior	104,061	Plasterer	17,980
Messenger, porter, and errand- boy	101,442	Warehouse—man, woman	17,861
Linen, flax manufacture	101,425	Saddler, harness-maker	17,583
Seamen, (merchant service), on shore, or in British ports		Hatter, hat manufacture	16,975
Grocer		Coachman (not domestic servant) guard, postboy	16,836
Gardener	89,206	Law clerk	16,626
Iron manufacture, moulder, founder	85,913	Coach-maker	16,590
Inn-keeper, licensed victualler, beershop-keeper	80,946	Cow-keeper, milk-seller	16,526
Seamstress, shirt-maker	80,032	Rope-maker	15,966
Bricklayer	75,721	Druggist	15,643
Butcher, meat-salesman		Surgeon, apothecary	15,163
Hose (stocking) manufacture		Tin-miner	15,050
School—master, mistress	67,989	Paper-manufacture	14,501
Lace manufacture	67,691	Coalheaver, coal labourer	14,426
Plumber, painter, glazier	65,499	Greengrocer, fruiterer	14,320
Baker	65,376	Muslin manufacture	14,098
Carman, carrier, carter, drayman	63,660	Confectioner	13,865
Charwoman	62,808	Tinman, tinker, tin-plate worker	13,770
Draper (linen and woollen)	62,472	Stay-maker	13,699
Engine and machine-maker	56,981	Solicitor, attorney, writer to the Signet	13,256
Commercial clerk	55,423	Dyer, scourer, calenderer	12,964
Cabinet-maker, upholsterer	49,184	Currier	12,920
Teacher (various), governess	48,082	Builder	12,818
Fisherman, woman	43,760	Farm bailiff	12,805
Boat, barge, man, woman	40,897	Hair dresser, wig-maker	12,173
Miller	40,575	Coal merchant, dealer	12,092
Earthenware manufacture	38,294	Glass manufacture	12,005
Sawyer	37,683	Carpet and rug manufacture	11,457
Railway labourer	37,268	Goldsmith, silversmith	11,242
Straw-plait manufacture	36,512	Brass founder, moulder, manufac- turer	11,230
Brick-maker, dealer	35,443	Maltster	11,150
Government civil service	34,306	Railway officer, clerk, station- master	10,948
Hawker, pedlar	32,062	Bookbinder	10,933
Wheelwright	31,168	Road labourer	10,923
Glover	30,963	Wine and spirit merchant	10,467
Shopkeeper (branch undefined)	30,553	Fishmonger	10,439
Horsekeeper, groom (not do- mestic) jockey	30,244	Merchant	10,256
	29,882	Ribbon manufacture	10,074
	29,800		
	29,408		

* This is the Army and Navy of the United Kingdom, exclusive of the Indian Army and Navy.

community,—lost, perhaps, without fault in the parties concerned. For it seems to me that the mode of gaining a livelihood is more often determined by chance than by intelligent choice; that the humbler walks in life are crowded chiefly because they require little preparation to enter them, and not because they are more congenial to the taste of any class, or more remunerative. Want of health, want of common instruction, more than want of money, keep multitudes in a state of unprofitable occupation.

The first on the list is a body of 1,460,896 persons. There is no reason why agricultural labourers need be unlettered, and so destitute of common resources as to be one of the first to fall helpless in seasons of difficulty; experience, however, says that they have proved such, and that the factory operatives, of whom there are, in cotton and calico only, more than half a million, are nearly the same.

The advanced age to which domestic servants remain in servitude is some proof, that however desirous of independence they may be, their industrial capabilities do not enable them very early, or very generally, to achieve it. Only one family in eight or nine throughout Great Britain affords, apparently, to keep a domestic, yet their number is so large. 376,551 individuals style themselves labourers, and, nevertheless, are unable to assign any of 332 occupations pursued as that to which they specially attach themselves. They offer to “lend a hand” whenever they are able. In the various branches of business some curiosities occur. The milliners and dress-makers, for one sex only we may presume, nearly equal the boot and shoemakers for both sexes. In time of peace the carpenters and joiners outnumbered the forces both by land and sea. The tailors outnumbered the butchers, bakers, and brewers, taken collectively. The laundresses nearly equal the tailors, and, according to Dr. Lyon Playfair, the washerwoman’s interest in a dozen shirts amounts to 7*l.* 16*s.*, or more than double that of the producer, the cotton-spinner, and the shirt-maker. Messengers, porters, and errand-boys, are 101,425. For every inn-keeper, licensed victualler, or beershop-keeper, there seems to be a poor seamstress or shirt-maker. The coopers are rather more than the clock and watch-makers (20,245 and 19,159). Medical men and their assistants are 18,728. The brewers are 18,620. The clergy of the Established Church 18,587. The police 18,348. Lawyers 16,763. The druggists and the surgeons differ little in numbers, but there are rather more drug-vendors than milk-sellers. In the paper manufacture we find 14,501. Railway officers, clerks, and station-masters are 10,948, while the old road labourers are 10,923. The wine and spirit merchants specially are 10,467, general merchants 10,256.

One or two other points only can be noticed connected with numbers. 1.317 per cent. of the men of the country are engaged in Government. 26 per cent. of the men and 8 per cent. of the women, twenty years of age and upwards, with 8 per cent. of the boys and 3 per cent. nearly of the girls, under twenty years of age, are employed in agricultural pursuits. 7 per cent. of the 5,458,815 men of the age of twenty and upwards are engaged in the construction of houses; more than 17 per cent. of the population are engaged in trades, mechanical arts, handicrafts, and manufactures, including mining. Railways absorb 28,353 individuals, the telegraph service 282.

One of the first ideas suggested by a consideration of the preceding statements is, How far can the existing division and classification of labour be considered permanent?

As this is the first labour list we have had made out, changes may be expected. It is to be hoped that improvements will take place in industrial processes. The lectures on the Results of the Great Exhibition of 1851, delivered before the Society of Arts, Manufactures, and Commerce, at the instance of H. R. H. Prince Albert, are very suggestive on this head, particularly that of Dr. Lyon Playfair. He seems to think the signs of the times significant,—that there are many errors to correct, many exigencies to supply. Under the stimulus of increased competition new powers will be called into action, complex processes will be simplified, manual dexterity will be elevated to mental ability, or driven out of the market by labour-saving machinery,—but all will assuredly be accomplished in accordance with the operation of natural laws, known or discoverable. Those alterations may be anticipated which we know to be required, for there is ever a close connection between the necessities and the improvements of an age.

It is happy for us that in a free community no kind of labour should be found repulsive to all. The diversity of capacity and ability provides for every social requirement. But all should be trained to feel that industrial talent or energy misapplied is national loss. To suffer either to lie dormant is positively sinful, socially and individually. A kind of talent, equal to the requirements of ordinary life, is easily put forth by its possessor; but most men have latent powers which the force of example or the pressure of circumstances only can call into action. Hence the importance of pointing to the higher aims of existence, and proclaiming them within the reach of all men. Hence the necessity of able expositions of the nature of the human mind, the laws by which it is regulated, and the purposes to which it may be applied. Let the wants of the day be made plain, and to meet them the aid of the humblest invited. Let competition be courted in the practical solution of problems like these: "To what extent can competence displace pauperism? How nearly can we free ourselves from the low-minded and the vicious, not by their expatriation, but by their elevation? To what extent can the resources and the powers of nature be converted into human welfare, the peaceful arts of life be advanced, and the vast treasures of human talent and genius be developed? How much of suffering, in all its forms, can be relieved, and, what is better than relief, how much can be prevented?"

In some respects our career, commercial and manufacturing, has been one of monopoly. We have not, as yet, exerted our utmost strength. Our grandest movements, probably, await the hour of contest with rival powers. It will be a crisis. There may be peril at such a period, but we trust we shall pass through it proudly. Nations, like individuals, display new life in their struggles, when dearest interests are staked. Preparation, however, is imperative. The Exhibition of 1851, and the more recent one at Paris, indisputably prove it. In our industrial efforts on the former occasion, it was remarked that although we bore away the palm on many points, our supremacy was in general stoutly challenged, and, in some cases,

utterly denied. Superiority, which seemed our own by hereditary right, was slipping from us. Our long experience in particular departments of labour gave us a degree of mechanical excellence which remains unrivalled, but this is chiefly the case in matters with which we and the world at large had long been acquainted. Where the highest kind of labour, that of invention or discovery, was called into requisition, we were not always, nor indeed generally, first. It was clearly demonstrated that the countries most distinguished for the universal spread of mental culture were foremost.

Our professors of science are singularly few (464); we hear on all sides that they are badly remunerated; what wonder if the sons of industry, discovering their poverty, should rather be deterred from the pursuit of knowledge than drawn to aid in its advancement.

This highest kind of labour, invention and discovery, exercises mighty influence on the destinies of mankind. It has wrought more revolutions, real and lasting ones, than all the conquerors in the world. Some of its lower forms merely, those of mechanical contrivances, gave us the control of cotton manufacture. Higher and nobler was the discovery of steam as a motive power. The two united produced the factory system, of which a modern writer says, "the philosophy of the schools supplies very imperfect help for estimating the results, because an innovating power of such force could never have been anticipated. The steam-engine had no precedent, the spinning-jenny is without ancestry; the mule and the power-loom entered on no prepared heritage, they sprang into existence, like Minerva from the brain of Jupiter, passing so rapidly through their stage of infancy, that they had taken their position in the world, and firmly established themselves, before there was time to prepare a place for their reception in a land already crowded with institutions." "But in our day," says another writer, "the imponderable properties of matter, as they are sometimes called, are in a state of rapid development. They will most probably play an important part in the progress of human society. The sun has become a linner, the electric fluid a postman, galvanism thrusts aside the goldsmith, and chemical action dispenses with the aid of mechanical agency." If these operate changes equal to the preceding, should we not be preparing for the consequences? The work of the world cannot be performed by ignorant men: intelligence is entering more and more largely into the conception of all our projects, the execution of all our plans.

What we term invention and discovery are but new applications of long existing powers, expositions of natural processes previously unnoticed. Both depend upon a knowledge of the laws of nature, resulting from industrious and enlightened research. They give to the nation that produces them, immeasurable superiority. They are attainable by all, for their successful culture is influenced by fixed principles. They are the finest ears of corn selected from the fairest fields, and will be found not by the wayside, but where the husbandry is best,—where nothing is neglected to render the soil fertile and the seed superior.

MISCELLANEA.

PROCEEDINGS OF THE STATISTICAL SOCIETY.

*Fourth Ordinary Meeting.—Session 1854-55.**Monday, 19th February, 1855.*

Thomas Tooke, Esq., V.P., in the Chair.

The following Gentlemen were elected Fellows of the Society :—

John Lewis Ricardo, Esq., M.P.

James Thomas Hammack, Esq.

The following Paper was read :—

“On the Loans raised by Mr. Pitt during the First French War, 1793-1801, with some statements in defence of the methods of Funding employed.” By William Newmarch, Esq.

*Fifth Ordinary Meeting.—Session 1854-55.**Monday, 19th March, 1855.*

Thomas Tooke, Esq., V.P., in the Chair.

Thomas Hopley, Esq., was elected a Fellow of the Society.

A discussion took place on Mr. Newmarch's Paper, “On the Loans raised by Mr. Pitt during the First French War, 1793-1801, with some statements in defence of the Methods of Funding employed.”

*Sixth Ordinary Meeting.—Session 1854-55.**Monday, 16th April, 1855.*

Sir John Peter Boileau, Bart., V.P., in the Chair.

The following Noblemen and Gentlemen were elected Fellows of the Society :—

The Rt. Hon. The Earl of Carnarvon.

Lord Robert Cecil, M.P.

Sir Charles Trevelyan, K.C.B.

Joseph Keech Aston, Esq.

William Brown, Esq., M.P.

Peter Hardy, Esq., F.R.S.

Frederick Hendricks, Esq.

Robert Hunt, Esq., F.R.S.

Thomas Abercrombie Welton, Esq.

The following Paper was read :—

“A Ten Years' Retrospect of London Banking.” By John William Gilbert, Esq., F.R.S.

*Seventh Ordinary Meeting.—Session 1854-55.**Monday, 21st May, 1855.*

Colonel Sykes, V.P., in the Chair.

The following Gentlemen were elected Fellows of the Society :—

R. Dudley Baxter, Esq.

John Berry Hayercraft, Esq.

William Francis Nooth, Esq., R.N.

George Kettleby Rickards, Esq.

John R. L. Walmisley, Esq.

Joseph White, Esq.

The following Papers were read :—

“On the Mining Resources of France.” By Henry Reader Lack, Esq.

“On the Distribution of the Emigrants from Europe over the surface of the United States.” By The Rev. Robert Everest.

THE MARRIAGES, BIRTHS, AND DEATHS,
REGISTERED IN THE DIVISIONS, COUNTIES, AND DISTRICTS OF ENGLAND.

The Marriages for the Quarter ended March, 1855, and the Births and Deaths for the Quarter ended June, 1855,

AS PUBLISHED BY AUTHORITY OF THE REGISTRAR-GENERAL.

This return comprises the births and deaths registered by 2,196 registrars in all the districts of England during the Spring quarter that ended on June 30th, 1855; and the marriages in 12,129 churches or chapels, about 3,631 registered places of worship unconnected with the Established Church, and 628 superintendent registrars' offices, in the quarter that ended on March 31st, 1855.

The returns present these general results: the marriages in the winter quarter were much below the average numbers; the births and the deaths in the spring quarter slightly exceeded the average proportions. The severe weather, the high price of provisions, the diminution of employment in some districts, and the withdrawal of an increased number of men from the country by the army and navy abroad, account for the decrease in the marriages. The stagnation in the winter was, however, probably only temporary; for war, instead of depressing, appears to increase the industry, the invention, and the energy of Englishmen. The rapid rate of growth of the British population commenced and attained its culminating point at the close of the last war.

MARRIAGES.—29,131 marriages were celebrated in the first three months of the year; or less in number by nearly 6,000 than the marriages in the winter quarter of the year 1853, when the marriages as much exceeded as in 1855 they fell below the average. The marriages are invariably fewer in the beginning than in the end of the year; and were at the annual rate of 1,262 persons married in 100,000 living in the winter quarter, whereas the average rate is 1,426.

The excess of marriages in the winter quarter of 1853, and the diminution in the winter quarter of 1855, are most remarkable in London and in Lancashire; but they are more or less apparent in every county, except Hampshire, Suffolk, the North Riding of Yorkshire, Durham, Northumberland, and Monmouthshire.

BIRTHS.—The births of 166,250 children were registered in the quarter that

Marriages, Births, and Deaths, returned in the Years 1843-55 and in the Quarters of those Years.

YEARS.....	1843	1844	1845	1846	1847	1848	1849	1850	1851	1852	1853	1854	1855
Marriages	123818	132249	143743	145664	135845	138230	141883	152744	154206	155782	164021	159349	...
Births	527335	540763	543521	572625	539965	563059	578159	593422	615865	624012	612377	634506	...
Deaths	346445	356933	349366	390315	423304	399833	440839	368995	395396	407195	421807	438239	...
MARRIAGES.													
Quarters ended the last day of													
March	25285	26387	29551	31417	27480	28398	28429	30567	32724	32977	35014	33144	29131
June	31113	34268	35300	37111	35197	34721	35844	39204	38635	40092	40335	40389	...
September	25847	31675	35003	35070	32439	32995	33874	37636	37316	38400	39786	38150	...
December	38573	39919	43889	42066	40729	42116	43736	45337	45531	47313	48886	47666	...
BIRTHS.													
March	136837	143578	143080	145108	146453	139736	153772	144551	157286	161803	161634	160892	166186
June	131279	136941	136853	149450	139072	149760	153693	155865	159073	159031	158718	172420	165250
September	128161	130078	132369	138718	127173	140359	135223	146911	150594	151232	147581	154735	...
December	131048	130166	131219	139349	127267	133204	135471	146095	148912	151956	144444	146459	...
DEATHS.													
March	94926	101024	104664	89484	119672	120032	105870	98430	105359	106358	118278	111970	134605
June	87234	85337	89149	90230	106718	99727	102153	92871	99458	100625	107861	102666	106584
September	76792	79708	74872	101664	95435	87638	135227	55849	91499	100382	92332	113939	...
December	87493	90864	80681	108937	103479	92436	97589	91845	99080	99770	103341	109664	...

ended on June 30th, 1855; or less by 7,000 than were registered in the corresponding quarter of the previous year, and more, to nearly the same extent, than were registered in the spring quarters of 1851-53. In the West Midland Counties, particularly in Staffordshire, and also in Cheshire, in Lancashire, in the West Riding of Yorkshire, and in the Northern Counties, the births of the quarter exceeded, to some extent, the births in the spring quarter of 1853.

INCREASE OF POPULATION.—As the number of births was 165,250, and of deaths 106,584, the natural increase of the English population in three months may be set down as 58,666, exclusive of immigrants from Scotland, Ireland, the colonies, or foreign parts. In the same period 65,210 emigrants, including a certain number of foreigners, left the ports of the United Kingdom at which there are Government Emigration officers. How many of the emigrants were born in England has not yet been learnt; but 39,509 proceeded to the United States, 10,397 to British North America, 14,639 to the Australian colonies, and 665 to other places.

The Emigration Commissioners have compiled a new return showing the occupations of a large proportion of the 323,429 persons who emigrated during the year 1854. About 136,375 were females, 187,054 were males, and 72,942 were children under fourteen years of age, 250,487 were adults. Of the 100,918 women of the age of fourteen and upwards, 28,564 were married, 11,378 were domestic and farm servants. Of the 134,789 men of the age of fourteen and upwards, the occupations of 38,467 were left undistinguished, while of the remaining 96,322 men no less than 50,914 were labourers, gardeners, carmen, carriers, and carters, and 13,491 were farmers, 3,984 were bricklayers, masons, slaters, plasterers, and 5,185 were carpenters and joiners, 1,790 were blacksmiths, farriers, or veterinary surgeons, 1,989 were

England :—Annual Rate per cent. of Marriage, Birth, and Death, during the Years 1845-55, and the Quarters of those Years.*

Estimated Population of England in thousands in the middle of each Year.....	16721	16925	17132	17340	17552	17766	17983	18206	18403	18618	...	18786
YEARS	1845	1846	1847	1848	1849	1850	1851	1852	1853	1854	Mean, 1845-54	1855
Marriages	·860	·861	·793	·797	·808	·860	·858	·872	·891	·856	·846	...
Births	3·251	3·383	3·152	3·217	3·294	3·340	3·425	3·428	3·328	3·408	3·326	...
Deaths	2·089	2·306	2·471	2·306	2·512	2·077	2·199	2·236	2·292	2·354	2·284	...
MARRIAGES.												
Quarters ended the last day of												
March	·721	·757	·655	·661	·661	·702	·742	·730	·775	·726	·713	·631
June	·819	·882	·826	·805	·822	·858	·864	·855	·880	·872	·857	...
September	·830	·822	·751	·755	·766	·840	·822	·836	·856	·812	·809	...
December	1·038	·983	·940	·961	·986	1·010	1·000	1·027	1·050	1·013	1·001	...
BIRTHS.												
March	3·491	3·498	3·488	3·252	3·575	3·321	3·567	3·582	3·576	3·523	3·487	3·602
June	3·291	3·551	3·265	3·474	3·523	3·530	3·557	3·509	3·464	3·722	3·489	3·534
September	3·140	3·251	2·945	3·211	3·056	3·281	3·317	3·291	3·177	3·294	3·196	...
December	3·103	3·256	2·938	3·038	3·053	3·253	3·270	3·298	3·101	3·111	3·142	...
DEATHS.												
March	2·554	2·157	2·850	2·794	2·462	2·261	2·388	2·354	2·617	2·452	2·489	2·918
June	2·144	2·144	2·506	2·313	2·341	2·107	2·224	2·221	2·354	2·216	2·257	2·279
September	1·776	2·382	2·163	2·005	3·057	1·917	2·015	2·155	1·988	2·425	2·191	...
December	1·908	2·545	2·389	2·108	2·199	2·045	2·176	2·165	2·219	2·330	2·208	...

* The table may be read thus, without reference to the decimal points:—In the year 1848, to 100,000 of the population of England there were 797 marriages, 3,247 births, and 2,306 deaths registered. The annual rates of marriage in each of the four quarters were ·661, ·805, ·755, and ·961 per cent.; the rates of death 2·794, 2·313, 2·005, and 2·108 per cent. In reading the population on the first line add three ciphers (000). The three months January, February, March, contain 90, in leap year 91 days; the three months April, May, June, 91 days; each of the two last quarters of the year 92 days. For this inequality a correction has been made in the calculation.

tailors, 1,151 were boot and shoe makers and 933 were bakers. It will be observed that the great majority of the men are connected with agriculture, or with the building, constructive, and clothing arts; for the numbers that pursue any other special occupation, except those above enumerated, was not considerable.*

THE PRICES OF PROVISIONS, AND THE WEATHER.—The abundance or the scarcity of food sensibly affects the births, deaths, and marriages; and the state of public credit affects the employment, and, consequently, the prosperity of the people.

The average price of wheat, which in the three months April, May, June, 1853, was at 44s. 6d. a quarter, was in 1854 at 78s. 4d., and in the corresponding months

The Average Prices of Consols, of Wheat, Meat, and Potatoes, also the Average Quantity of Wheat sold and imported Weekly, in each of the nine Quarters ended June 30th, 1855.

Quarters ended	Average Price of Consols (for Money.)	Average Price of Wheat per Quarter in England and Wales.	Wheat sold in the 290 Cities and Towns in England and Wales making Return.	Wheat and Wheat Flour entered for Home Consumption at Chief Ports of Great Britain.	Average Prices of Meat per lb. at Leadenhall and Newgate Markets (by the Carcase).		Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.
					Beef.	Mutton.	
1853	£						
June 30.	100 $\frac{3}{8}$	44s. 6d.	84,559	82,623	4d.—5 $\frac{3}{4}$ d. Mean 4 $\frac{7}{8}$ d.	5d.—6 $\frac{3}{4}$ d. Mean 5 $\frac{7}{8}$ d.	110s.—145s. Mean 127s. 6d.
Sept. 30.	97	51s. 10d.	86,087	120,020	4 $\frac{1}{4}$ d.—6d. Mean 5 $\frac{1}{8}$ d.	5d.—7 $\frac{1}{4}$ d. Mean 6 $\frac{1}{8}$ d.	110s.—125s. Mean 117s. 6d.
Dec. 31.	93 $\frac{3}{8}$	69s. 10d.	79,002	91,627	4d.—6d. Mean 5d.	4 $\frac{1}{4}$ d.—7d. Mean 5 $\frac{3}{8}$ d.	135s.—165s. Mean 150s.
1854							
Mar. 31.	91	79s. 6d.	60,022	103,519	4 $\frac{1}{4}$ d.—6 $\frac{1}{4}$ d. Mean 5 $\frac{1}{4}$ d.	4 $\frac{1}{2}$ d.—7d. Mean 5 $\frac{3}{4}$ d.	120s.—160s. Mean 140s.
June 30.	88 $\frac{3}{8}$	78s. 4d.	55,842	103,331	4 $\frac{1}{2}$ d.—6 $\frac{1}{4}$ d. Mean 5 $\frac{3}{8}$ d.	4 $\frac{3}{4}$ d.—6 $\frac{3}{4}$ d. Mean 5 $\frac{3}{4}$ d.	137s.—172s. Mean 155s.
Sept. 30.	93 $\frac{7}{8}$	63s. 10d.	56,389	48,135	4 $\frac{3}{4}$ d.—6 $\frac{3}{4}$ d. Mean 5 $\frac{3}{4}$ d.	5d.—7d. Mean 6d.	75s.—85s. Mean 80s.
Dec. 31.	93 $\frac{3}{8}$	68s. 0d.	128,783	19,513	4 $\frac{1}{2}$ d.—6 $\frac{3}{4}$ d. Mean 5 $\frac{5}{8}$ d.	5d.—7d. Mean 6d.	95s.—105s. Mean 100s.
1855							
Mar. 31.	91 $\frac{7}{8}$	69s. 11d.	88,000	33,821	4 $\frac{3}{4}$ d.—6 $\frac{1}{2}$ d. Mean 5 $\frac{5}{8}$ d.	4 $\frac{3}{4}$ d.—6 $\frac{1}{2}$ d. Mean 5 $\frac{5}{8}$ d.	105s.—120s. Mean 112s. 6d.
June 30.	90 $\frac{3}{8}$	73s. 4d.	94,791	57,068	4 $\frac{1}{2}$ d.—6 $\frac{1}{2}$ d. Mean 5 $\frac{3}{4}$ d.	4 $\frac{3}{4}$ d.—6 $\frac{3}{4}$ d. Mean 5 $\frac{3}{4}$ d.	110s.—130s. Mean 120s.
Col.	1	2	3	4	5	6	7

Note.—The total number of quarters of wheat sold in England and Wales for the 13 weeks ended June 30th, 1853, 1,099,261; for the 13 weeks ended September 30th, 1853, 1,119,128; for the 14 weeks ended December 31st, 1853, 1,106,027; for the 13 weeks ended March 31st, 1854, 780,282; for the 13 weeks ended June 30th, 1854, 725,946; for the 13 weeks ended September 30th, 1854, 733,059; for the 13 weeks ended December 31st, 1854, 1,674,173; for the 13 weeks ended March 31st, 1855, 1,143,999; and for the 13 weeks ended June 30th, 1855, 1,232,284. The total number of quarters entered for Home Consumption was, respectively, 1,074,095; 1,560,255; 1,191,149; 1,345,743; 1,343,305; 625,755; 253,669; 439,676; and 741,890.

* From a Return with which the Registrar-General has been favoured by the Emigration Commissioners.

of the present year at 73s. 4d. Bread has been dear for two years, or since the harvest of 1853. Beef is somewhat cheaper, and so are potatoes; while mutton is at the same price as in the spring of 1854.

The weather during the quarter was remarkable for the continuance of the cold, which in the previous quarter had been unusually severe. Except on a few days only, the temperature was below the average. There was a deficiency of rain. All the meteorological phenomena observed are ably described by Mr. Glaisher, p. 385.

STATE OF THE PUBLIC HEALTH.—The public health has partly recovered from the effects of the late epidemic of the cholera, and from the severe weather of last winter, and the mortality, which is on the average at the annual rate of 22·57 in 1,000 on the population, was 22·79 in 1,000 in the last quarter. The average rate of mortality in the spring quarter in 117 districts, comprising the chief towns, is 24·50 in 1,000 persons living, in the small towns and country parishes 20·88 in 1,000. The mortality in the last quarter was at the rate of 25·03 in 1,000 in the town districts, 20·97 in 1,000 in the country districts.

There were 106,584 deaths in the quarter; or 3,918 more deaths than were recorded in the corresponding quarter of 1854; for the cholera, which was epidemic in that year, only became fatal in the subsequent quarter. In the eleven divisions the deaths varied little during the spring quarters of 1853, 1854, 1855.

In London some improvements are referred by the Registrar of St. Giles' to the working of the Lodging House Act; and the health of Bermondsey has been better since the tidal ditches have been filled up, and the parish has been paved and drained.

In the South-Eastern Counties, Farnham has, for the last seven months, been suffering from low fever, hooping-cough, and measles; Canterbury, from small pox, scarlatina, and bronchitis. Alverstoke has suffered severely from scarlatina, and the deaths (211) exceed the births (121): the same excess of deaths is observed at Winchester, where 23 men died in the barracks. The death of a female, aged 105, at Windsor, is mentioned; and it is stated that her two sons are above 80 years of age.

In the South Midland Counties, Northampton and Bedford experienced a rate of

Deaths in the Spring Quarters.

	1845	1846	1847	1848	1849	1850	1851	1852	1853	1854	Total 1845-54	1855
In 117 Districts, comprising the chief towns...	40847	43737	51585	46552	48070	42886	47774	48357	51734	50822	472364	50907
In 511 Districts, comprising chiefly small towns and country parishes	48302	46493	55133	53175	54083	49985	51684	52268	56127	51844	519094	55677
Total.....	89149	90230	106718	99727	102153	92871	99458	100625	107861	102666	991458	106584

Population, Deaths, and Mortality per cent. in the Spring Quarters, 1845-55.

	Population Enumerated.		Deaths in 10 Spring Quarters, 1845-54.	Annual Rate of Mortality of 10 Spring Quarters, 1845-54.	Annual Rate of Mortality in the Spring Quarter 1855.
	June 6-7th, 1841.	March 31st, 1851.			
In 117 Districts, comprising the chief towns	6,612,958	7,886,473	472,364	2·450	2·503
In 511 Districts, comprising chiefly small towns and country parishes	9,301,190	10,041,136	519,094	2·088	2·097
All England	15,914,148	17,927,609	991,458	2·257	2·279

mortality that much exceeds the average. Scarlatina has raged. In Royston the parish of Kelsall has suffered from typhus; the drainage and water are "very bad."

In the Eastern Division several districts have been healthier than usual; Norwich, Depwade, Mitford, Downham, and Thetford have, however, suffered from a higher than their average death rate. Small pox, measles, and scarlatina have prevailed in several districts of Essex and Norfolk.

In the South-Western Division the mortality is about the average, but it was higher than in the preceding year in Wilts, Devon, Cornwall, and Somerset. The excess was considerable in Chippenham, Stoke Damerel, and Liskeard. The mining population in Cornwall is not very satisfactory. One of the Registrars of Liskeard says:—

"In Calstock, one of the parishes of my district, there is an epidemic of scarlatina. Some houses of miners and others are overcrowded, and due regard is not paid to ventilation. There are no water closets, privies, or other conveniences belonging to the premises, and the places for the deposit of soil, &c., are, in many places, immediately adjoining the houses, in some, almost touching the door of the dwellings. In another parish (Callington) there are several unregistered lodging-houses, and the whole of them are in a filthy and unwholesome condition; every night there is a great influx of vagrants of the lowest order, and on my visiting them one night after ten o'clock I found five persons in a bed, and as many as eighteen in one room. It is a great pity the magistrates do not look into the matter and abate the nuisances."

In the West Midland Division the mortality was lower in the spring quarter, both in Staffordshire and Warwickshire, than it was in the spring of 1854; measles, small pox, and scarlatina, are mentioned as prevailing in some districts of Shropshire.

The mortality in Lincolnshire, of the North Midland Division, was above, in Leicestershire, Nottinghamshire, and Derbyshire, below, the death-rate of the previous spring quarter (1854). Scarlatina occurred in Lincoln, Horncastle, Caistor, and Gainsborough. The frame-work knitting trade has been bad for some time in Basford, near Nottingham.

In the North Western Division 2,494 deaths were registered in Cheshire, 14,464 in Lancashire. A death from Asiatic cholera was returned at Runcorn on the 1st of June. Some sanitary improvements are noticed in the Lancashire towns. Liverpool is healthy at present. In West Derby it is said:—

"The district has been, during all the quarter, in a very healthy state, which may, in a great degree, be owing to the extent of street and house draining, street cleansing, and other excellent sanitary improvements that have been adopted by the corporation of Liverpool in the municipal part of the district."

At Wigan, sanitary improvements are progressing, such as street sewerage, drainage, and removal of nuisances. The Registrar of North Bury writes:—

"The deaths in this quarter are considerably under the average, and amount to just a-half the number of births. No small pox, measles, scarlatina, whooping-cough, or cholera. The sewerage, water-supply paving, scavenging, &c., of the town, are in a very satisfactory state. Large sums have been judiciously expended by the town commissioners during the last seven years, to the comfort and advantage of the inhabitants; and the appearance of the town now offers an agreeable contrast to other manufacturing towns in this district."

These facts are encouraging, as they show that the high mortality in the Lancashire districts may be greatly diminished, and that substantial improvements are followed by immediate results. Measles, scarlatina, and typhus, prevailed in some districts of Lancashire; and the mortality was higher in Manchester than it was in the two previous springs.

In Yorkshire the deaths (10,414) were below the average numbers; and the decrease was chiefly in the West Riding. Leeds and Sheffield were healthier than in the previous two springs. The Registrar of Bradford East refers the low mortality to sanitary improvements; vaccination is, however neglected. He, singularly enough, observes, "There is an increase in the births this quarter, caused by a slight improvement in trade, and the settling at home of a great number of the wives of the militia." The births and deaths exceed the average numbers.

The Northern Counties experienced their average rate of mortality; 5,596 of the inhabitants died. Small pox and scarlatina have been fatal in some districts of Durham; vaccination is neglected.

In Monmouthshire and Wales the deaths were 7,392, which is near the average number. Measles prevailed in Abergavenny and Crickhowell.

Marriages Registered in the Quarters ended 31st March, 1853-55; Births and Deaths Registered in the Quarters ended 30th June, 1853-55, in the Divisions of England.

DIVISIONS.	Area in Statute Acres.	Population, 1851.	MARRIAGES			BIRTHS			DEATHS		
			Registered in the Quarter ended the last Day of								
			March			June			June		
			1853.	1854.	1855.	1853.	1854.	1855.	1853.	1854.	1855.
ENGLAND	37,324,915	17,927,609	35,014	33,144	29,131	158,718	172,420	165,250	107,861	102,666	106,584
<i>Divisions.</i>											
i. London	78,029	2,362,236	5,862	5,373	4,723	20,628	22,109	21,446	14,594	15,114	14,984
ii. South Eastern Counties	4,065,105	1,628,386	2,461	2,316	2,176	12,639	13,730	12,761	8,632	7,984	9,133
iii. South Midland Counties	3,201,290	1,234,332	1,692	1,544	1,346	10,169	10,925	10,202	6,795	6,236	6,883
iv. Eastern Counties	3,214,099	1,113,982	1,457	1,463	1,362	9,337	9,676	9,107	6,279	5,364	6,194
v. South Western Counties	4,994,490	1,803,291	3,338	3,026	2,746	14,550	15,298	14,324	10,024	8,616	9,693
vi. West Midland Counties	3,865,332	2,136,573	4,294	4,115	3,472	19,422	21,884	21,329	12,681	12,994	12,713
vii. North Midland Counties	3,540,797	1,215,501	2,102	2,012	1,747	10,499	11,158	10,694	6,913	6,899	6,624
viii. North Western Counties	2,000,227	2,488,438	6,171	5,947	4,784	25,195	27,557	26,761	17,592	16,273	16,958
ix. Yorkshire	3,654,636	1,789,047	3,982	3,612	3,170	17,161	19,015	18,036	11,442	10,905	10,414
x. Northern Counties	3,492,322	969,126	1,685	1,826	1,741	8,986	9,824	9,771	5,621	5,316	5,596
xi. { Monmouthshire and Wales	5,218,588	1,186,697	1,970	1,910	1,864	10,132	11,244	10,819	7,288	6,965	7,392

On the Meteorology of England and Scotland during the Quarter ended June 30th, 1855. By JAMES GLAISHER, ESQ., F.R.S., Sec. of the British Meteorological Society.

During the past quarter the temperatures of a few days only have reached their average values; the cold period which set in on January 10th having continued with little intermission till June 26th. The month of April was cold; that of May was very severe. At the beginning of this month the temperature of the air at night was frequently near that of the freezing point of water. On May 5th the reading at several places exceeded 20° by 1° or 2° only; the night common to May 4th and 5th was for the most part cloudless; and vegetation was subjected to a very low temperature. At Greenwich the reading of a thermometer, placed on long grass, with its bulb exposed fully to the sky, was as low as $12^{\circ}8$, a reading lower than any on record, as far as I know, at this season of the year. Snow fell at many places up to the end of May. The temperature of the month was $4^{\circ}5$ below its average, and was the coldest May since that of 1837. June was cold till the 26th; on the 21st, the day of the solstice, the temperature was remarkably low at all places south of the latitude 53° , extending to the east and south coasts, but not to the west of England and to Cornwall and Devonshire; the temperature of vegetation was from 5° to 6° below that of the freezing point of water; there was a white frost everywhere within the above limits, and thick ice was formed on ponds and still water, even up to the south coast; this cold extended to the Isle of Wight, but with less severity.

The mean temperature of the air at Greenwich for the quarter ended May, constituting the three spring months, was $44^{\circ}2$, being $2^{\circ}2$ below the average of 84 years.

1855. Months.		Temperature of									Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
		Air.			Evaporation.		Dew Point.		Air— Daily Range.						Water of the Thames.
		Mean.	Diff. from Average of 84 Years.	Diff. from Average of 14 Years.	Mean.	Diff. from Average of 14 Years.	Mean.	Diff. from Average of 14 Years.	Mean.	Diff. from Average of 14 Years.	Mean.	Diff. from Average of 14 Years.	Mean.	Diff. from Average of 14 Years.
April	45.8	+0.1	-0.9	42.6	-1.1	38.8	-1.6	20.9	+3.5	...	1n.251	-0.17	Gr.2.9	-0.2
May	48.8	-3.8	-4.5	45.7	-3.8	42.3	-3.8	19.4	+0.1	52.2	.284	-.044	3.3	-0.4
June	56.9	-1.1	-2.1	52.1	-2.1	47.8	-3.3	22.8	+3.0	59.5	.348	-.039	3.9	-0.4
Mean.....	50.5	-1.6	-2.5	46.8	-2.3	43.0	-2.9	21.0	+2.2	...	.294	-.033	3.4	-0.3

1855. Months.		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horiz- ontal Move- ment of the Air.	Reading of Thermometer on Grass.				
		Mean.	Diff. from Average of 14 Years.	Mean.	Diff. from Average of 14 Years.	Mean.	Diff. from Average of 14 Years.	Amnt.	Diff. from Average of 40 Years.		Number of Nights it was			Low- est Read- ing at Night.	High- est Read- ing at Night.
										At or below 32°.	Be- tween 32° and 40°.	Above 40°.			
April	78	- 2		In. 29.933	+1.95	Gr. 544	+ 4	In. 0.1	-1.7	Miles. 96	16	12	2	o 17.0	o 41.5
May	80	+ 1		29.679	-.098	536	+ 3	1.8	-0.3	117	13	12	6	12.8	50.0
June	74	- 2		29.863	+ .079	530	+ 4	0.7	-1.2	87	6	8	16	26.0	53.0
Mean.....	77	- 1		29.825	+ .058	537	+ 4	Sum 2.6	Sum -3.2	100	Sum 35	Sum 32	Sum 24	12.8	53.0

Note.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

Meteorological Table, Quarter ended June 30th, 1855.

NAMES OF STATIONS.	Mean Pressure of Dry Air reduced to the Level of the Sea.	Mean Temperature of the Air.	Highest Reading of the Thermometer.	Lowest Reading of the Thermometer.	Mean Daily Range of Temperature.	Mean Monthly Range of Temperature.	Range of Temperature in the Quarter.	WIND.		Mean Amount of Cloud.	RAIN.		Mean Degree of Humidity.
								Mean estimated Strength.	General Direction.		Number of Days on which it fell.	Amount collected.	
	in.	°	°	°	°	°	°					in.	
Jersey.....	29.695	48.6	77.0	34.0	8.8	28.7	43.0	1.7	W.S.W. & N.E.	5.4	26	5.1	89
Falmouth.....	....	51.2	75.0	31.0	14.0	34.7	44.0	1.8	N.E.	6.4	35	9.6	....
Truro.....	29.695	50.0	76.0	22.0	15.5	42.0	54.0	1.7	N.	6.6	33	8.3	78
Teignmouth.....	29.720	49.7	73.6	27.2	14.6	36.0	46.4	0.5	Var.	6.0	37	5.3	79
Exeter.....	29.704	50.8	79.0	24.0	17.0	42.0	55.0	2.3	Var.	4.1	40	7.5	77
Newport.....	29.711	50.7	79.6	24.9	19.4	46.3	54.7	2.4	Var.	6.2	31	3.3	75
Clifton.....	29.702	49.3	82.8	24.2	17.8	47.0	58.6	0.9	N.E. & N.W.	5.6	41	6.2	83
Royal Observatory.....	29.709	50.5	83.5	25.9	21.0	48.1	57.6	....	N.E. & S.W.	6.6	25	2.6	77
Somerset House.....	....	49.9	....	24.9	15.2	....	....	....	N.W.	....	....	....	71
Oxford.....	29.711	50.2	81.1	27.7	18.1	44.2	53.4	2.0	N.W. & N.E.	7.2	34	4.6	78
Hartwell Rectory.....	29.666	50.2	81.9	23.4	20.2	49.6	58.5	1.2	N.E. & S.W.	5.9	37	3.5	81
Royston.....	29.755	50.1	83.6	23.3	20.1	49.9	60.3	....	N.	6.2	55	4.2	74
Lampeter.....	29.722	49.0	79.9	21.4	19.0	48.3	58.5	1.5	N.W.	6.3	47	8.3	81
Norwich.....	29.694	49.9	83.0	27.0	18.5	45.3	56.0	1.8	N.E. & N.W.	6.6	25	4.3	80
Derby.....	29.734	48.4	79.0	26.0	18.7	43.0	53.0	....	Var.	....	39	5.2	74
Holkham.....	29.709	48.2	81.7	24.7	15.5	45.4	57.0	1.4	N. & N.E.	5.7	27	3.8	80
Nottingham.....	29.739	50.2	83.3	22.6	16.0	47.9	60.7	0.9	Var.	6.9	41	5.3	73
Hawarden.....	29.689	48.9	77.5	28.0	14.5	30.3	49.5	1.6	N.W.	6.7	27	4.9	85
Gainsborough.....	....	48.7	84.0	27.0	16.0	44.7	57.0	0.6	Var.	5.7	39	4.0	78
Warrington.....	29.676	48.7	80.8	24.9	17.3	45.3	55.9	0.6	Var.	5.6	36	5.9	85
Wakefield.....	29.707	49.4	82.7	22.2	21.0	51.6	60.5	1.9	w, & N.	6.6	25	3.1	75
York.....	29.691	47.5	78.0	25.0	16.4	45.7	53.0	....	N.E.	....	....	....	77
Scarborough.....	29.702	46.5	71.5	29.0	42.3	31.0	42.5	....	Var.	6.1	41	7.7	82
North Shields.....	....	46.1	74.5	27.5	12.4	36.1	47.0	2.4	Var.	....	....	....	91
Arbroath.....	29.683	46.8	73.0	26.0	18.2	36.7	47.0	1.1	Var.	6.5	26	3.8	71

REVENUE.

An Abstract of the Net Produce of the Revenue of the United Kingdom in the Years and Quarters ended 30th September, 1854 and 1855; showing the Increase or Decrease thereof.—(Continued from page 297.)

Sources of Revenue.*	Years ended 30th September.			
	1854.	1855.	Increase.	Decrease.
	£	£	£	£
Customs.....	20,316,431	21,667,218	1,290,787	....
Excise	15,744,613	16,710,391	965,778	....
Stamps	6,984,076	7,084,548	100,472	....
Taxes....	3,153,773	2,915,036	....	238,737
Property Tax	6,965,614	13,449,761	6,484,147	....
Post Office.....	1,365,000	1,158,181	....	206,819
Crown Lands.....	321,572	275,516	....	46,056
Miscellaneous	940,658	935,867	....	4,791
Totals.....	55,791,737	64,136,518	8,841,184	496,403
			Net Increase £8,344,781	

Sources of Revenue.	Quarters ended 30th September.			
	1854.	1855.	Increase.	Decrease.
	£	£	£	£
Customs	5,349,251	5,713,674	364,423	....
Excise	5,212,782	4,946,776	....	266,006
Stamps	1,707,509	1,604,165	....	103,344
Taxes.....	133,577	111,374	....	22,203
Property Tax.....	2,545,056	4,538,646	1,993,590	....
Post Office.....	343,000	261,757	....	81,243
Crown Lands.....	61,572	66,516	4,944	....
Miscellaneous	154,594	188,557	33,963	....
Totals.....	15,507,341	17,431,465	2,396,920	472,796
			Net Increase £1,924,124	

An Account showing the Net Revenue and other Receipts of the Quarter ended the 30th of September, 1855; the Application of the same, and the Charge of the Consolidated Fund for the said Quarter, together with the Surplus or Deficiency upon such Charge.

Surplus balance beyond the charge of the Consolidated Fund, for the quarter ended June 30th, 1855, viz. :—	£	Amount applied out of the net income for the quarter ended September 30th, 1855, to redemption of Exchequer Bills (Deficiency) for the quarter ended June 30th, 1855	£
Great Britain	£390,907	Amount applied to redemption of Ways and Means Bills issued in the quarter ended June 30th, 1855	3,306,433
Ireland	390,907	Net amount applied out of the Consolidated Fund, to supply services in the quarter ended September 30th, 1855	1,740,000
Net Income received in the quarter ended September 30th, 1855, as shown in page 387	17,431,465	Charge of the Consolidated Fund for the quarter ended September 30th, 1855, viz. :—	14,024,840
Amount received in the quarter ended September 30th, 1855, in part of Loan of £16,000,000	5,668,000	Interest of the Permanent Debt	5,682,696
Amount of Exchequer Bills (Supply) issued in the quarter ended September 30th, 1855, to the Commissioners for the Reduction of the National Debt to redeem Ways and Means Bills held by them	2,700,000	Termable Debt	1,397,412
Amount received in the quarter ended September 30th, 1855, in repayment of advances for Public Works, &c.	209,444	Interest of Exchequer-Bills (Deficiency)	2,677
	26,399,816	Ditto (Ways and Means)	19,231
		The Civil List	99,907
		Other charges on Consolidated Fund	327,307
		Advances for Public Works, &c.	432,270
			7,861,400
Balance, being the deficiency on the 30th Sept., 1855, upon the charge of the Consolidated Fund in Great Britain, to meet the Dividends and other Charges payable in the quarter to December 31st, 1855, and for which Exchequer Bills (Deficiency) will be issued in that quarter	853,442	Surplus Balance beyond the charge of the Consolidated Fund, for the quarter ended September 30th, 1855, viz. :—	
		Great Britain	320,585
		Ireland	320,585
	£27,253,258		£27,253,258

CORN.

Average Prices of Corn per Imperial Quarter in England and Wales, during each Week of the Third Quarter of 1855; together with the Monthly and Quarterly Average—(Continued from p. 299.)

[Communicated by H. F. JARVIS, Esq., Comptroller of Corn Returns.]

Weeks ended on a Saturday, 1855.		Weekly Average.					
		Wheat.	Oats.	Barley.	Rye.	Beans.	Peas.
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
July	7	76 1	28 6	34 5	44 6	46 4	40 9
"	14	75 11	28 8	34 7	44 8	45 11	42 4
"	21	76 4	28 5	34 8	45 2	46 0	42 10
"	28	77 7	29 1	34 8	43 1	46 10	42 4
Average for July		76 5 $\frac{3}{4}$	28 8	34 7	44 4 $\frac{1}{4}$	46 3 $\frac{1}{4}$	42 0 $\frac{3}{4}$
August	4	78 2	28 11	35 0	46 11	46 11	42 5
"	11	77 7	29 1	34 8	47 2	47 3	43 1
"	18	75 9	29 1	31 2	42 4	46 6	43 7
"	25	73 7	27 6	34 5	43 6	46 4	40 0
Average for August		76 3 $\frac{1}{4}$	28 7 $\frac{1}{2}$	34 6 $\frac{1}{2}$	44 11 $\frac{3}{4}$	46 9	42 3 $\frac{1}{4}$
September	1	72 7	29 3	34 9	42 7	46 9	38 8
"	8	74 10	28 2	35 0	43 11	47 10	39 4
"	15	76 9	28 6	35 3	45 3	48 0	43 5
"	22	77 8	28 8	35 9	47 8	49 1	42 11
"	29	77 3	28 4	36 4	48 8	49 5	45 4
Average for September		75 9 $\frac{3}{4}$	28 7	35 5	45 7	48 2	41 11
Average for the Quarter		76 1 $\frac{3}{4}$	28 7 $\frac{1}{2}$	34 10 $\frac{3}{4}$	45 0	47 1 $\frac{1}{2}$	42 0 $\frac{3}{4}$

STOCKS AND SHARES.

Fluctuations in the Stock and Share Markets during the Months of July, August, and September, 1855.—(Continued from p. 299.)

Stocks and Shares.	Amt. of Share.	Amt. Paid.	Price on the			Highest Price during the Months of			Lowest Price during the Months of		
			2 July.	1 Aug.	1 Sept.	July.	Aug.	Sept.	July.	Aug.	Sept.
Consols	...	...	91 to $\frac{1}{2}$	90 $\frac{1}{2}$ to 91	91 to $\frac{1}{2}$	91 $\frac{1}{2}$	91 $\frac{5}{8}$	91 $\frac{1}{2}$	90 $\frac{5}{8}$	90 $\frac{5}{8}$	88 $\frac{1}{2}$
Exchequer Bills	...	...	23s. 6d	22s. 6d.	12s. 6d.	27s. P.m.	24s.	15s. P.m.	20s. P.m.	13s.	5s. dis.
RAILWAYS.											
Brighton	Stock	100	101	99	97 $\frac{1}{2}$	102	100	98 $\frac{1}{2}$	100	98	95
Caledonian	"	100	62 $\frac{1}{2}$	63	63	63 $\frac{1}{2}$	63 $\frac{3}{8}$	63 $\frac{1}{2}$	62 $\frac{1}{2}$	62 $\frac{1}{2}$	60 $\frac{1}{2}$
Eastern Counties	"	20	12 $\frac{1}{2}$	11 $\frac{1}{2}$	11	12 $\frac{1}{2}$	11 $\frac{1}{2}$	11	11 $\frac{1}{2}$	10 $\frac{1}{2}$	9 $\frac{1}{2}$
Great Northern	"	100	93	90 $\frac{1}{2}$	88 $\frac{1}{2}$	93 $\frac{1}{2}$	91	88 $\frac{1}{2}$	89 $\frac{1}{2}$	88 $\frac{1}{2}$	85 $\frac{1}{2}$
Great Western	"	100	67	64 $\frac{1}{2}$	55 $\frac{1}{2}$	67	64 $\frac{1}{2}$	57 $\frac{1}{2}$	64 $\frac{1}{2}$	54 $\frac{1}{2}$	54 $\frac{1}{2}$
London & North-Western	"	100	100 $\frac{1}{2}$	98 $\frac{1}{2}$	94 $\frac{1}{2}$	101 $\frac{1}{2}$	99 $\frac{1}{2}$	95	97 $\frac{1}{2}$	97 $\frac{1}{2}$	90 $\frac{1}{2}$
Midland	"	100	72 $\frac{1}{2}$	69 $\frac{1}{2}$	69 $\frac{1}{2}$	73 $\frac{1}{2}$	72 $\frac{1}{2}$	69 $\frac{1}{2}$	69 $\frac{1}{2}$	68 $\frac{1}{2}$	63 $\frac{1}{2}$
Lancashire and Yorkshire	"	100	81	80 $\frac{1}{2}$	81 $\frac{1}{2}$	82	84 $\frac{1}{2}$	82 $\frac{1}{2}$	80 $\frac{1}{2}$	80 $\frac{1}{2}$	76 $\frac{1}{2}$
North Staffordshire	"	20	17 $\frac{1}{2}$	12 $\frac{1}{2}$	11	11	11 $\frac{1}{2}$	11	10 $\frac{1}{2}$	10 $\frac{1}{2}$	10 $\frac{1}{2}$
South-Eastern	Stock	100	61 $\frac{1}{2}$	61	61	62 $\frac{1}{2}$	62 $\frac{1}{2}$	61	60 $\frac{1}{2}$	60 $\frac{1}{2}$	56 $\frac{1}{2}$
South-Western	"	100	83	86 $\frac{1}{2}$	84 $\frac{1}{2}$	87	88	84 $\frac{1}{2}$	83	84 $\frac{1}{2}$	81
York, Newcastle, & Berwick	"	100	74	73	72 $\frac{1}{2}$	74	74 $\frac{1}{2}$	73	72 $\frac{1}{2}$	72 $\frac{1}{2}$	68 $\frac{1}{2}$
York and North Midland	"	100	50 $\frac{1}{2}$	49	48 $\frac{1}{2}$	50 $\frac{1}{2}$	49 $\frac{1}{2}$	48 $\frac{1}{2}$	48 $\frac{1}{2}$	48 $\frac{1}{2}$	45 $\frac{1}{2}$
Northern of France											
Northern of France	20	16	35 $\frac{1}{2}$	35 $\frac{1}{2}$	36 $\frac{1}{2}$	37	37 $\frac{1}{2}$	36 $\frac{1}{2}$	35 $\frac{1}{2}$	35 $\frac{1}{2}$	34 $\frac{1}{2}$
East Indian	20	20	25 $\frac{1}{2}$	24 $\frac{1}{2}$	24 $\frac{1}{2}$	25 $\frac{1}{2}$	24 $\frac{1}{2}$	24 $\frac{1}{2}$	24 $\frac{1}{2}$	24 $\frac{1}{2}$	22 $\frac{1}{2}$

CURRENCY.

BANK OF ENGLAND.

An Account, pursuant to the Act 7th and 8th Victoria, c. 32, for each Week ended on a Saturday, for the Third Quarter of 1855.—(Continued from p. 300.)

[Compiled from the "Bankers' Magazine."]

ISSUE DEPARTMENT.

Date.	Notes Issued.	Notes in hands of Public.	Government Debt	Other Securities.	Gold Coin and Bullion.	Silver Bullion.
1855.	£	£	£	£	£	£
July 7 ...	30,895,085	20,482,750	11,015,100	2,984,900	16,895,085	...
" 14 ...	30,631,890	20,978,870	11,015,100	2,984,900	16,631,890	...
" 21 ...	29,980,810	20,772,865	11,015,100	2,984,900	15,980,810	...
" 28 ...	29,745,990	20,964,845	11,015,100	2,984,900	15,745,990	...
Aug. 4 ...	29,601,590	20,709,290	11,015,100	2,984,900	15,601,590	...
" 11 ...	29,650,275	20,493,430	11,015,100	2,984,900	15,650,275	...
" 18 ...	29,506,690	20,277,140	11,015,100	2,984,900	15,506,690	...
" 25 ...	28,916,770	20,042,215	11,015,100	2,984,900	14,916,770	...
Sept. 1 ...	28,368,010	20,104,630	11,015,100	2,984,900	14,368,010	...
" 8 ...	27,668,005	20,142,105	11,015,100	2,984,900	13,668,005	...
" 15 ...	27,110,270	19,713,470	11,015,100	2,984,900	13,110,270	...
" 22 ...	26,695,250	19,408,435	11,015,100	2,984,900	12,695,250	...
" 29 ...	26,368,255	20,172,685	11,015,100	2,984,900	12,368,255	...

BANKING DEPARTMENT.

Date.	Proprietors' Capital.	Rest.	Public Deposits.	Other Deposits.	Seven Day and other Bills.	Total Dr.
1855.	£	£	£	£	£	£
July 7 ...	14,553,000	3,177,665	6,852,350	12,586,891	1,017,440	38,187,346
" 14 ...	14,553,000	3,221,280	2,811,014	15,048,543	1,054,212	36,688,049
" 21 ...	14,553,000	3,252,303	3,178,033	13,604,199	1,061,838	35,649,373
" 28 ...	14,553,000	3,256,786	4,221,408	11,883,528	1,511,615	35,426,337
Aug. 4 ...	14,553,000	3,350,872	5,152,221	11,857,328	1,052,978	35,966,399
" 11 ...	14,553,000	3,360,660	6,266,890	11,604,444	1,003,187	36,788,181
" 18 ...	14,553,000	3,369,751	6,407,739	12,250,406	1,012,112	37,593,008
" 25 ...	14,553,000	3,327,349	6,971,825	11,674,829	997,165	37,524,168
Sept. 1 ...	14,553,000	3,628,723	7,267,969	11,098,018	979,551	37,527,561
" 8 ...	14,553,000	3,637,340	7,591,337	10,970,353	991,556	37,743,556
" 15 ...	14,553,000	3,644,704	7,838,531	11,146,762	990,140	38,173,137
" 22 ...	14,553,000	3,657,307	8,389,892	11,266,877	1,000,541	38,867,517
" 29 ...	14,553,000	3,670,125	8,147,209	11,437,955	1,001,743	38,807,032

Date.	Government Securities.	Other Securities.	Notes.	Gold and Silver Coin.	Total Cr.
1855.	£	£	£	£	£
July 7 ...	13,757,224	13,328,806	10,412,335	688,981	38,187,346
" 14 ...	13,656,190	12,681,833	9,653,020	697,006	36,688,049
" 21 ...	13,071,978	12,706,108	9,207,945	663,342	35,649,373
" 28 ...	13,092,528	12,913,262	8,781,145	639,402	35,426,337
Aug. 4 ...	12,851,030	13,592,925	8,892,300	630,144	35,966,399
" 11 ...	12,766,624	14,239,692	9,156,845	625,020	36,788,181
" 18 ...	12,810,164	14,943,006	9,229,550	610,288	37,593,008
" 25 ...	13,025,164	14,995,232	8,874,555	629,217	37,524,168
Sept. 1 ...	13,031,088	15,661,985	8,263,380	571,108	37,527,561
" 8 ...	13,031,088	16,637,227	7,525,900	549,371	37,743,586
" 15 ...	12,799,363	17,388,784	7,396,800	588,185	38,173,137
" 22 ...	12,498,067	18,509,278	7,286,815	573,357	38,867,517
" 29 ...	12,125,026	19,915,570	6,195,570	570,673	38,807,032

CURRENCY.—Continued.

COUNTRY BANKS.

Average amount of Promissory Notes in Circulation in England and Wales in each Week ended on a Saturday, for the last two weeks of the First Quarter, and for the Second Quarter of 1855.—(Continued from page 200.)

[Compiled from the "Bankers' Magazine."]

ENGLAND AND WALES.			
Date.	Private Banks.	Joint Stock Banks.	Total.
1855.	£	£	£
Mar. 24.....	3,802,534	3,119,073	6,921,607
„ 31.....	3,878,766	3,158,411	7,037,177
April 7.....	3,976,408	3,173,208	7,149,616
„ 14.....	3,993,005	3,154,998	7,148,003
„ 21.....	3,977,880	3,173,259	7,151,139
„ 28.....	3,944,434	3,167,155	7,111,589
May 5.....	3,932,228	3,143,969	7,076,197
„ 12.....	3,895,863	3,123,130	7,018,993
„ 19.....	3,894,434	3,139,829	7,034,263
„ 26.....	3,850,155	3,092,917	6,943,072
June 2.....	3,800,342	3,043,629	6,843,971
„ 9.....	3,777,970	3,008,907	6,786,877

Fixed Issues—Private Banks, £4,600,718 ; Joint Stock Banks, £3,325,857.

Average amount of Promissory Notes in Circulation in Scotland and Ireland during the Four Weeks ended the 14th April, the 12th May, and the 6th June, 1855.—(Continued from page 200.)

SCOTLAND.			
Date.	£5 and above.	Under £5.	Total.
1855.	£	£	£
April 14.....	1,316,601	2,426,335	3,742,940
May 12.....	1,413,195	2,488,000	3,901,201
June 9.....	1,632,707	2,744,987	4,377,695

IRELAND.			
Date.	£5 and above.	Under £5.	Total.
1855.	£	£	£
April 14.....	3,040,045	3,422,412	6,462,458
May 12.....	3,122,553	3,219,696	6,342,250
June 9.....	3,025,748	2,996,235	6,021,985

Fixed Issues—Scotland, £3,087,209 ; Ireland, £6,354,494.

CURRENCY.—Continued.

COUNTRY BANKS.

Average amount of Promissory Notes in Circulation in England and Wales in each week, ended on a Saturday, for the last Three Weeks of the Second Quarter, and for the Third Quarter of 1855.—(Continued from last page.)

[Compiled from the "Banker's Magazine."]

ENGLAND AND WALES.

Date.	Private Banks.	Joint Stock Banks.	Total.
1855.	£	£	£
June 16.....	3,753,479	3,989,405	6,742,884
„ 23.....	3,760,446	3,001,227	6,761,673
„ 30.....	3,774,481	3,013,800	6,788,281
July 7.....	3,818,403	3,037,361	6,855,764
„ 14.....	3,814,373	3,052,584	6,866,957
„ 21.....	3,766,997	3,003,247	6,770,244
„ 28.....	3,705,297	2,916,761	6,622,058
Aug. 4.....	3,649,541	2,876,260	6,525,801
„ 11.....	3,619,686	2,871,980	6,491,666
„ 18.....	3,595,509	2,889,853	6,485,362
„ 25.....	3,607,003	2,914,710	6,521,713
Sept. 1.....	3,600,178	2,927,357	6,527,535
„ 8.....	3,619,991	2,936,065	6,556,056
„ 15.....	3,658,112	3,003,928	6,662,040
„ 22.....	3,731,676	3,062,988	6,794,664
„ 29.....	3,840,639	3,085,199	6,925,838

Fixed Issues—Private Banks, £4,600,718; Joint Stock Banks, £3,325,857.

Average amount of Promissory Notes in Circulation in Scotland and Ireland during the Months ended the 7th of July, the 4th of August, and the 1st of September, 1855.—(Continued from last page.)

SCOTLAND.

Date.	£5 and above.	Under £5.	Total.
1855.	£	£	£
July 7.....	1,522,027	2,593,875	4,115,907
Aug. 4.....	1,479,463	2,569,249	4,048,716
Sept. 1.....	1,405,943	2,557,885	3,963,833

IRELAND.

Date.	£5 and above.	Under £5.	Total.
1855.	£	£	£
July 7.....	2,927,531	2,825,069	5,752,602
Aug. 4.....	2,934,494	2,729,424	5,663,922
Sept. 1.....	2,839,760	2,754,800	5,594,562

Fixed Issues—Scotland, £3,087,209; Ireland, £6,354,494.

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HA Royal Statistical Society,
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R65 Journal. Series A (General)
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